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AUTHOR Budu-Smith, John
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ABSTRACT

The purpose of a study was to provide information that could be used by Ghana in considering initiatives for improving apprenticeship training within the technical and vocational education system as attempts are made to improve the economy in the 1990s. Four key areas were investigated: the organization of apprenticeship training; funding for apprenticeship; labor market requirements; and promotion of apprenticeship training. Data were obtained from government records, training institution records, and structured interviews with 20 respondents, 5 at the national government level and 15 representatives of training institutes, trades advisory committees, employers of apprentices, journeyworkers, and final-year apprentice trainees. Findings indicated that fundamental issues in relationship to Ghana's apprenticeship system needed to be addressed first. The needs were as follows: a national labor force training policy; a funding mechanism to support the apprenticeship system; coordination between industry and educational institutions, including coordination for the economic use of training resources; and a demonstration of commitment to apprenticeship training on the part of the government, employers, and labor. (The thesis includes a 9-page bibliography, the interview questionnaire, and 6 appendices with data on the education system in Ghana.) (CML)

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GHANA'S APPRENTICESHIP SYSTEM:
PROSPECTS FOR RENEWAL IN THE 1990'S

A Research Project

Submitted to the Faculty of Graduate Studies and Research

in Partial Fulfillment of the Requirements

For the Degree of

Master of Vocational/Technical Education

Faculty of Education

University of Regina

by

John Budu-Smith

Accra, Ghana

March 1990

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Dr. G. Richert, Faculty of Social Work, U of R

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ABSTRACT

The purpose of the study was to identify the key issues and problems that were perceived by Ghanaian apprenticeship personnel as factors for improving Ghana's apprenticeship system. Specifically, the study was to provide information which could be used by Ghana in considering initiatives for improving her apprenticeship training within the technical/vocational education system as she attempts to improve her economy in the 1990's.

The study involved the investigation in Ghana of four key areas of Ghana's apprenticeship training. These were: the organization of apprenticeship training; funding for apprenticeship; labour market requirements; and promotion of apprenticeship training. Other areas also investigated were the impact of technological change on Ghana's apprenticeship system and evaluation of the system.

Findings indicated that unless certain fundamental issues were addressed in relation to Ghana's apprenticeship system, all other attempts at improvement would be in vain. These issues were the need for: a national manpower training policy; a funding mechanism to support the apprenticeship system; coordination between industry and educational institutions including coordination for the economic utilization of training resources; and a demonstration of commitment to apprenticeship training on the part of Government, employers and labour. Findings

identified strategies for improving Ghana's apprenticeship training in the four key areas investigated.

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CHAPTER 1

THE PROBLEM

Introduction and Background

Apprenticeship training is the oldest form of teaching skills for employment. Before formal education developed, there was "learning on the job," which was apprenticeship (International Labour Office (ILO), 1981a). For many centuries apprenticeship training has been the system of transferring job or occupational skills from generation to generation and it still continues in most traditional societies (Grabe, 1981; Manpower Administration, Department of Labour, 1977; Muir, 1971; Worthington, 1984).

Contemporary formal apprenticeship has its roots in Europe where thirteenth century craft guilds regulated apprenticeship and determined qualifications for master craftsmen. In the nineteenth century the Industrial Revolution, with its demands for mass unskilled labour, broke down the prevailing master-trainee apprenticeship system which suited "domestic industry." However, the continued need for skilled craftsmanship for the building and maintenance of machines led to the development of the "industrial apprentice," where the employer replaced the master craftsman and the trade unions replaced the guilds (Burleigh, 1988). The final stage of apprenticeship development as it presently exists in Europe and North

America was achieved early in the twentieth century when national and provincial governments assumed the role of legislating apprenticeship, designating apprenticeable trades and deciding who may practice at a designated trade.

Apprenticeship In Developing Countries

Modern formal apprenticeship in developing countries is a relatively recent phenomenon. Although pre-colonial Africa had its own traditional apprenticeship system for many centuries (Allen, 1982; Callaway, 1971; 1964; McLaughlin, 1979; Peil, 1970), colonialism introduced institutional vocational education and training and formal apprenticeship. Regrettably, these initiatives did not receive serious attention from policy makers as compared to general academic education (Dankwah, 1985; Ministry of Education, 1989; Urevbu, 1988). Formal apprenticeship in the Third World, particularly in Africa, started receiving serious attention only within the past thirty years with the advent of political independence. In this connection, most of the formal apprenticeship systems in developing countries are reflections in one way or another of the interaction and shared experiences from historical and cultural associations with European, North American or other industrialized societies. In furtherance of this trend, United Nations (UN) agencies like the International Labour Office (ILO), United Nations Development Program (UNDP) and United Nations

Educational, Scientific and Cultural Organization (UNESCO) have, through the medium of "technology transfer," contributed significantly to the transfer of appropriate training systems including apprenticeship training through their various technical assistance programs to Third World countries.

Some minimal level of industrialization is necessary for a country's economic development. Most Third World countries are moving toward some level of industrialization and mechanization of agriculture for socioeconomic development. This observation is reflected by Lowe (1971, p. 146) who stated that economic advancement in developing countries can be achieved only "through the creation of an agricultural surplus and some measure of industrialization which involves the application of scientific and technological skills to the methods of agricultural and industrial production at all levels." In this context, the need for effective apprenticeship training and other forms of technical and vocational education and training programs has assumed a much greater significance in developing countries. For any meaningful and significant socioeconomic development to take place, it has been recognized that technical and vocational education and training must be given a deserving priority attention.

It has become important that the institution of formal apprenticeship training is organized effectively to produce

the kind of skilled manpower base upon which essential productive, social and economic development can be built. In this connection, one major issue of concern being expressed, especially in the developing world, is the need to improve the organization and delivery of formal apprenticeship training. At this juncture, the equally important role of the informal type of apprenticeship training, especially in Third World rural development, must be recognized. However, this informal area of apprenticeship is outside the scope of this study and deserves a full study on its own.

Need for the Study

In consonance with the general concerns in the Third World for the improvement of apprenticeship training in developing countries, Ghana's formal apprenticeship system needs to be studied so that recommendations, where appropriate, may be made towards renewal for a more effective skilled manpower training output. The study is especially important at a time when Ghana is taking a serious look at her human resource base and is restructuring her educational system towards a more vocational and productive orientation. Ghana is making renewal efforts towards socioeconomic reconstruction through a program of economic recovery which includes a comprehensive review of her human resource development. The new policies of

reconstruction have become necessary after over two decades of economic decline and stagnation.

The study is significant in that apprenticeship training is a major vehicle for producing skilled manpower (ILO, 1981b); it is also viewed as a major avenue for Ghana's socioeconomic recovery (World Bank, 1989).

According to Ghana's Ministry of Education (1989, p. 37), "by 1990, 50% of the students may be terminating their basic education upon completion of Junior Secondary School. This number would represent approximately 196,000 students . . . . The basic learning skills acquired will not be adequate for guaranteeing them gainful employment." A tabulation which projects the foregoing observation is contained in Appendix C. The demographic indications from the tabulation project these figures to rise to 314,584 by 1995.

The above statement raises very serious concerns which agitate the minds of many Ghanaians. As an example, Noi (1978, p. 18) raised similar concerns at a symposium on training in Ghana by asking the seminar to consider the fate of the large number of youth 14 years old and older who would have been exposed to some vocational training but not sufficiently trained to be employable in the world of work. Dankwah (1985) expressed similar concerns and advocated the need for mobilization of the youth from Ghana's Junior Secondary School (JSS) and Senior Secondary School (SSS)

programs through an effective national apprenticeship system for skilled manpower development.

It is generally recognized that as Ghana is a predominantly agricultural country, her economic survival will depend partially on the major industries but especially on small scale industries (Thomi & Yankson, 1985) both in urban and rural settings. There is therefore the need to evolve an effective and rational apprenticeship system which will provide the means to train and equip as many youth as possible with productive and entrepreneurial skills for wage employment as well as for self-employment.

Developing countries are faced with two conflicting views when considering the programs needed to train young people. On the one hand potential investors ask about the availability of skilled manpower in a country before they invest; on the other hand, people question the justification for training young people when there is no immediate employment to absorb them. This is a sort of "Catch 22" situation: should a nation wait for economic improvement and investment before training or should it train in anticipation of investment. The latter orientation takes the position that it is more of an asset to equip a nation's youth with productive skills which they could ultimately use for self-employment in small scale industry or rural cooperatives than to have a body of unproductive illiterate youth who become a liability to the nation with attendant

rural-urban migration and social problems. Another contention is whether, in view of Ghana's rather poor economic situation, she can afford to engage in training on a major scale. Although this concern is very appropriate and timely, the important issue is what should be done to mobilize the youth for skilled manpower and economic development. The question perhaps should be, what will be the economic and social penalties to be paid if nothing is done about the situation. Foster (1966) reflects on this dilemma by contending that if developing countries are going to get out of their current economic problems, then technical/vocational education and apprenticeship training should be "the cart rather than the horse in economic growth . . . and its development depends upon real and perceived opportunities within the economic structure" (p. 173) and must be given the necessary attention and the recognition it deserves.

It was therefore the aim of this study to identify the key issues and problems relating to relevant areas of Ghana's apprenticeship training. The issues and problems were identified by a sampling of Ghanaian apprenticeship personnel. Investigations were then conducted to find out how such issues and problems were addressed elsewhere. The outcomes of the study include some suggestions and ideas towards renewing and improving Ghana's apprenticeship system for national effectiveness as she moves into the last decade

of the century.

The Purpose of the Study

The purpose of the study was to identify the key issues and problems that were perceived by Ghanaian apprenticeship personnel as factors for improving Ghana's apprenticeship program within the technical/vocational system. Issues and problems in the following areas were investigated by collecting data from administrative personnel, employers, and graduate apprentices in Ghana.

Organization of Apprenticeship in Ghana

Areas relating to training of apprentices in Ghana were investigated individually with special attention to the following:

1. Improving the in-school aspects of Ghana's apprenticeship training;
2. Improving the on-the-job aspects of Ghana's apprenticeship training;
3. Apprenticeship legislation including bonding of apprentices;
4. Improving apprenticeship testing and certification;
5. Improving linkages between vocational training institutions and industry; and
6. The role of trades advisory committees in Ghana's apprenticeship system.

Funding for Ghana's Apprenticeship Training

Elements considered under the area of funding for apprenticeship in Ghana included:

7. Issues regarding financing of apprenticeship in Ghana.
8. The perceived roles of identifiable agencies or groups in the funding of apprenticeship training in Ghana.
9. Measures to be taken in addressing funding of Ghana's apprenticeship training.

Labour Market Requirements

Elements investigated under labour market requirements included:

10. The extent to which Ghana's apprenticeship is linked with labour market demands in the various apprenticeship occupations.
11. Measures that could improve apprenticeship training and links with labour market demands.

Promotion of Apprenticeship Training in Ghana

12. Under this area, the investigation sought respondents' views and strategies for improving the image of apprenticeship and making it more acceptable to:
    (a) Ghanaian employers;
    (b) Ghanaian youth; and
    (c) The general public including policy makers.

Other areas, not so critical in the context of less

developed countries, yet significant enough to merit some attention, are the impact of technological change and the evaluation of the apprenticeship training system. Views of Ghanaian apprenticeship personnel were also sought on:

13. The impact of technological change on Ghana's apprenticeship training.
14. The extent to which Ghana's apprenticeship program has been evaluated.

Significance of the Study

It is hoped that the findings and recommendations of the study will assist Ghana in improving the identified aspects of apprenticeship training within the technical/vocational education system as she endeavours to improve her economy in the 1990's through skilled manpower development.

Definition of Terms

The following are definitions of some common terms used in the study.

Apprenticeship. A period of long-term training substantially carried out within an establishment and regulated by a statutory law or custom according to an oral or written contract which imposes mutual obligations on the two parties concerned, usually between a trainee and an employer (ILO, 1981a).

Formal Apprenticeship. A period of training which usually combines on-the-job training under the supervision of a certified craftsman or journeyman with in-school (institutional) technical or vocational instruction (ILO, 1981a).

Apprentice. A person who enters into a contract in writing with an employer to serve the employer for a specified period not exceeding five years for the purpose of learning and being taught a trade (Ghana Government, 1978).

Employer. Any person, firm, partnership, business association or public authority that employs craftsmen/journeymen and apprentices in connection with any designated trades or work incidental to those trades (Ghana Government, 1978).

Technical and Vocational Education. The study of technologies and related sciences and the acquisition of practical skills and knowledge relating to occupations in various sectors of economic and social life. The broad educational goals of technical and vocational education distinguish it from "vocational training" which is aimed at developing the particular skills and related knowledge required by a specific occupation or groups of occupations (ILO, 1981a; UNESCO, 1974).

In-School Training. In the context of vocational

training, this concept refers to the full-time or part-time off-the-job institutional training of apprentices during their period of apprenticeship. This concept also applies to institutional training of school leavers in preparation for entry into apprenticeship, employment or an occupation.

On-The-Job Training. Training offered in an active work situation usually on the premises of an establishment in which the trainee is gainfully employed.

Delimitations of the Study

Data were collected from twenty selected respondents who were connected with the apprenticeship system in Ghana. Teachers' and students' opinions and perceptions were not included.

Limitation of the Study

The findings are specific to Ghana's situation and have limited generalizability to other developing countries.

CHAPTER II

REVIEW OF LITERATURE

Introduction

In this chapter studies and reports which relate to apprenticeship programs within technical and vocational educational training systems are reviewed. Of particular significance are studies and reports which seek to identify major issues and problems in the organization and delivery of apprenticeship training.

This chapter is organized into the following sections: features of apprenticeship training, a description of Ghana's technical/vocational education and training system, studies on technical/vocational education and apprenticeship training in Ghana, and studies of other apprenticeship systems. The literature presented in this chapter is not comprehensive. However, studies and reports reviewed are representative of the literature on the improvement of apprenticeship training within the context of technical and vocational education training.

Features of Apprenticeship Training

Apprenticeship training in both developed and developing countries varies in methods of structure, delivery, detail and emphasis, depending upon prevailing economic and social constraints and the goals of respective countries. Nevertheless, all apprenticeship systems have

the following common features:

* Regulatory framework of apprenticeship.
* Provisions for training, relating to both field on-the-job, and off-the-job vocational training usually in the ratio of 80:20,
* Provisions relating to employment, and
* Provisions relating to certification (ILO, 1981a, pp. 39-55).

Each of the above features is important for an effective apprenticeship system. The regulatory feature determines whether a country's system is compulsory or voluntary. These common features are related to the four key areas being investigated in this study: Organization of Apprenticeship; Funding; Labour Market Requirements; and Promotion of Apprenticeship.

Ghana's Educational System

Ghana's education operates in the context of a system which has been undergoing reform in recent times. Ghana's educational development evolved from a colonial system which accorded respect and greater rewards to purely academic education and to white collar jobs rather than to technical/vocational education and training (Dankwah, 1985; Ministry of Education, 1989). The Gold Coast Government's Accelerated Development Plan for Education, 1951, was the first among several subsequent initiatives which recognized

the importance of and the need for technical/vocational education to develop skilled manpower for Ghana's socioeconomic development (Gold Coast Government, 1951). Somehow, despite the recognition of the need for work-oriented education, educational policies and wage structures have tended to favour general academic education (Foster, 1965). This apparent contradiction in the Ghanaian educational system was succinctly observed by Foster (1966, p. 169) who argued that "the apparent paradox in Ghanaian education has been the emphasis placed on vocational and agricultural training in all documentary sources and the relative absence of it within the actual system of education."

Conscious efforts to address Foster's "paradox" started in the 1970's when the Government recognized that in the midst of vast educational achievement there was an "abundance of educated Ghanaians who cannot be employed because they do not possess the requisite skills" (Evans-Anfom et al., 1975, p. xii). The Dzobo Report of 1973 reviewed the structure and content of Ghana's Educational System and emphasized the right of every Ghanaian to education as a basic human right. It also emphasized a basic philosophy that education in Ghana should be meaningful and practical to Ghana's needs (Ministry of Education, 1974). Implementation of the Dzobo Report on a pilot scale in the mid-1970's culminated in the current

educational reforms of 1987 aimed at improving both the access and quality of basic education and consolidating the fundamental philosophy of education developed since Ghana's Independence (Ministry of Education, 1989). These major reforms (Ministry of Education, 1987) include:

* Changing the structure of educational system from the current statutory 17 years to 12 years of pre-university education. In other words, from 6 years primary, 4 years middle, 5 years secondary and 2 years sixth form schooling to 6 years primary, 3 years Junior Secondary comprising basic education and 3 years Senior Secondary schooling. The new policy is to provide 9 years of basic education for every child.
* Increasing access to education. Presently 43% of children of school going age are not in school. It is also projected that 25% or one-fourth of senior secondary school graduates will go on to tertiary level.
* Improving the content, relevance and efficiency of education to primarily meet Ghana's needs and also those of the international community.
* Training teachers to implement the reforms (pp. 2-3).

Ghana's ongoing educational reform emphasizes nationalism, dignity of labour, science and technology, self-education, cultural identity, among others as its philosophical foundations (Evans-Anfom et al., 1986). The

basic education level combines primary education, starting from age 6 years, with junior secondary school education designed to enable pupils to acquire pre-technical, pre-vocational and basic life-skills which will be terminal for approximately 50% of the youth at age 15 years (Ministry of Education, 1989, p. 45). According to the Ministry "the traditional secondary school was found to be placing too much emphasis on academic work . . . being far removed from socioeconomic development and national manpower requirements . . . . The new senior secondary programme will seek to correct these defects . . . and promote individual as well as national development" (p. 23). In general, the senior secondary education from age 16 years, will build on the foundations laid at the basic education level and will be terminal for about 75% of the students at age 18 years, allowing only about 25% of them to move on to the tertiary level (Ministry of Education, 1987, p. 3). So that as already indicated elsewhere, the importance of an effectively organized apprenticeship skills training program at post-JSS level cannot be over-emphasized. The tertiary level, which comprises all post secondary and university education, is expected to provide the middle level and high level professional, management and research manpower for national development. A university and tertiary education rationalization restructuring process for efficiency and effectiveness has also been set in process (Ministry of

Education, 1988).

The pre-university level of education is administered by the Ghana Education Service while tertiary education is administered by the Council for Higher Education, both under the Ministry of Education.

The Technical/Vocational Education System

The Ghana Education Service (GES), under the Ministry of Education, is responsible for technical and vocational education and training at the pre-university level. There are 20 technical and vocational institutions spread over Ghana except the Upper West Region. (See Appendix D) These institutions offer to mostly middle school and some primary school leavers, a range of pre-employment craft courses leading to the intermediate and the advanced levels of the City and Guilds of London Institute certification. Three of these institutions also offer apprenticeship courses leading to Ghana's National Craftsman's Certificate (NCC). Courses run by the technical institutions are offered in a variety of models; full-time, block-release, day-release, part-time afternoon, or part-time evening basis depending upon whether the program is pre-employment or apprenticeship. The courses offered at each institution are shown in Appendix D.

There are also three active polytechnics with three additional ones in formative stages. These polytechnics offer technical education and advanced craft training to

graduates from secondary schools and technical institutes respectively. Two Technical Teachers Colleges provide pedagogical training for technical teachers. Under Ghana's current educational reforms, candidates for the technical/vocational institutes will come mostly from the JSS level while the polytechnics and the two technical teachers colleges will move to the tertiary level to cater to post-senior secondary students.

The demand for vacancies in the technical/vocational institutions increases each year while facilities remain insufficient to cope with even the existing level of enrollment. In Ramsay's estimation (1984, p. 16), "the existing capacity can absorb only 6.0% of eligible candidates."

The Technical and Vocational Education Division of the GES is directly responsible for public technical, vocational and commercial education and training. It formulates policies, approves and reviews curricula, conducts examinations and awards certificates. Its director reports directly to the Director-General of the GES.

Ghana's National Apprenticeship System

Ghana, as a former British Colony, has evolved a formal apprenticeship system which takes its roots from British tradition with inputs from the ILO and UNDP. It is essentially of the dual type with about 20% of the training

being done in off-the-job, in-school environment, while about 80% of the training is done on-the-job with the employer in industry.

The development of formal national apprenticeship system in Ghana was included in Ghana's Second 7-Year Development Plan of 1959. It had been deemed necessary as a national priority to develop skilled manpower to support existing industries and the projected industrial expansion Ghana was embarking upon. Although there were already in existence some systematic individual apprenticeship schemes among some Government establishments, industry and major private firms, the training arrangements which existed were being conducted individually and without standards or coordination. The Ghana Government therefore invited the ILO between 1959 and 1961 to assist in setting up a national apprenticeship system which would help produce the necessary skilled manpower to meet Ghana's development needs in agricultural processes, mining and industry (International Labour Office, 1962). The 1961 Apprenticeship Act No. 45, which placed primary responsibility for Ghana's national apprenticeship training with the Department of Labour, marked the beginnings of earlier attempts to coordinate apprenticeship training in Ghana (Ghana Government, 1961).

The need for the better coordination of various forms of vocational training at various levels, including a nationally organized apprenticeship training system, was

recognized by Ghana in the mid-1960's. Based on Ghana's request, the National Vocational Training Institute (NVTI) was established in 1969, under the Ministry of Labour and Social Welfare (now Ministry of Mobilization and Social Welfare), by the UNDP and ILO to coordinate apprenticeship training programs among other skilled manpower development activities in Ghana (Kwami, 1984; Ramsay, 1984). The 1970 Ghana Government National Vocational Training Act No. 351, which established the Institute outlined the functions of the NVTI among others, to include the following:

* the organization of apprenticeship, in-plant training and training programs for industrial and clerical workers, and the training of instructors and training officers required for that purpose;
* the development of training standards and trade testing (Ghana Government, 1970).

The NVTI operates the apprenticeship program through councils and committees, namely, a National Apprenticeship Council, National Training Council, various Trades Advisory Committees and a National Trade Testing Committee (Kwami, 1984).

Although by Act 351, the NVTI is supposed to be the only certifying body for tradesmen and craftsmen in Ghana, the technical and vocational institutions under the GES mostly train to both external and localized City and Guilds of London Institute examinations leading to the award of

various craft certificates. However, the NVTI also offers similar courses and examinations in the various trades as offered by the GES institutions and awards the following certificates:

- National Craftsman Certificate
- Trade Test Certificate, Grade I
- Trade Test Certificate, Grade II
- Proficiency Certificate Grade I
- Proficiency Certificate Grade II

NVTI also issues various secretarial and typist's certificates. The National Craftsman Certificate (NCC) is considered to be the highest trade qualification in Ghana (United Nations Development Program (UNDP) and International Labour Office (ILO), 1978; Ramsay, 1984). The NVTI validates and offers its training programs through various training institutions and centres it has established and which are under its jurisdiction. Appendix E provides a list of vocational institutions approved by the NVTI to participate in Ghana's apprenticeship training. Most of these institutions are directly operated by the NVTI. The projected NVTI enrollments for both apprenticeship and pre-employment courses in trades which are similar to those offered under the GES are shown in Appendix F.

The foregoing narration reflects the structure and activities that the NVTI is supposed to represent; however, the reality reflects a situation where Ghana's

apprenticeship system needs to be co-ordinated and improved for effectiveness. As an example, there appear to be two parallel sets of technical/vocational training institutions in the public system offering similar pre-employment and apprenticeship programs, one set under the GES within the Ministry of Education and another set being operated by the NVTI and under the Ministry of Mobilization and Social Welfare.

Other Vocational Training Systems in Ghana

Besides the training institutions under the GES and NVTI, other parastatal agencies and private industry offer skilled training to their workers. However, they rely on the polytechnics and technical/vocational institutions under the GES and NVTI Centres to provide their workers with basic skills, after which they offer specialization training specific to the employer or industry. Examples of these are the Ghana Water and Sewerage Corporation, the Electricity Corporation of Ghana, and Valco, among others.

Larger private firms such as Africa Motors, Japan Motors, Automotive Technical Services, and Mechanical Lloyd to mention only a few, operate their own training schools, mainly in Accra. They recruit pre-employment or pre-apprenticeship trainees nationally, usually with City and Guilds or NVTI qualifications, and give them a year of training at the firm's training school and a year or two of

practical work. Many of these trainees get registered as apprentices with the NVTI.

Other non-governmental agencies offer vocational training on pre-employment or pre-apprenticeship basis. These include the Opportunities Industrization Centre (OIC) with origins from the United States, the Young Men's Christian Association (YMCA), the Technology Consultancy Centre (with the University of Science and Technology) and the Integrated Community Centres for Employable Skills (ICCES) funded by UNICEF (World Bank, 1989). The foregoing agencies offer programs in the formal and informal sectors (urban and rural sectors) to middle school leavers with orientation towards self-employment. Besides the foregoing, there is a sector of private Ghanaian technical and vocational institutions which offers training to the youth, but these institutions are mostly inefficient as they are plagued by problems of inadequate equipment and unqualified staffing. Trainees therefore tend to use these private institutions as stepping stones to the public institutions (Ministry of Education, 1989).

Studies on Ghana's Technical/Vocational Education and Apprenticeship Training

Ghana's concern for a well developed technical and vocational education system has resulted in a number of studies since her political independence over 30 years ago.

Some of these are discussed in this section.

Adams and Segaar (1962) studied Ghana's manpower or labour market requirements as a basis for accelerated increases in the production of the Ghanaian labour force soon after the promulgation of Ghana's 1961 Education Act and the first Apprenticeship Act of 1961. The team surveyed Ghana's technical and vocational education training facilities and staffing requirements and recommended changes that would serve the needs of Ghana's economy. Their recommendations touched on many aspects of technician and craft apprenticeship training, with instructor development being identified as one of the key factors necessary for improving the training system (pp. 10-20).

The Kwapong Education Review Commission of 1967 surveyed the declining standards of Ghana's Education System and emphasized, inter alia, the importance of technical and vocational education and apprenticeship training. Kwapong et al. (1967) identified, among others, the lack of support for skills training and recognized that Ghana's "technical and vocational training should be oriented towards producing skilled manpower for the development and maintenance of an agricultural economy" (p. 16).

Russell, Long, Stott and Titcomb's (1969) survey of technical and vocational education in Ghana about a decade after Adam's and Segaar's study further identified a number of deficiencies in Ghana's technical and vocational

education system. Among the deficiencies was a serious lack of funding for facilities and equipment, and a lack of experienced staff for effective and practical programs (pp. 28-42). Other drawbacks which constrained the effectiveness of the institutional training programs at that time included the lack of links with industry and the absence of a serious in-service (occupational and teacher training) program for teaching staff.

More recent studies have also touched on the need to encourage the development of Ghana's apprenticeship training. In a study by the UNDP and ILO (1978, pp. 15-35) on the NVTI, it was observed that the Institute, as the agency responsible for apprenticeship training in Ghana, was meeting its objectives. However, the study identified shortcomings which included the need for the NVTI to ensure improvement in the in-school training aspect of Ghana's apprenticeship system.

Aggrey et al. (1980, pp. 8-13) also recommended the need to make technical and vocational training more practical and relevant to the needs of industry. Nyarko (1980), who investigated the restructuring of Ghana's technical and vocational education and training observed that Ghana's in-school technical/vocational training was more theoretical than necessary. In Nyarko's view, the existing system was too theoretical and must be reviewed and equipped with resources to make the training more relevant

to the needs of local industry (pp. 24-38).

Ghana is presently reforming her educational system to emphasize vocational training. In that context, the report of Evans-Anfom et al. (1988, pp. 31-36) on senior secondary schools in Ghana highlights the importance of apprenticeship training "to the perpetuation and survival of essential skills and the economic well-being of a nation." Evans-Anfom et al. recommend the need for the rationalization of resources and the strengthening of various technical and vocational institutions to enable them to become effective in apprenticeship programs.

The foregoing position is supported by the World Bank (1989, p. 37) which identifies apprenticeship training as a fundamental pre-requisite for employment both in the formal and informal sectors of Ghana's economy in the context of an effective technical/vocational training system.

Ghana's concern for the development of her skilled manpower through apprenticeship training based on an effective technical/vocational education training system is reflected in the studies discussed in this section. Unfortunately, most of the outcomes of these studies have fallen on deaf ears because apprenticeship and technical/vocational education have been generally looked down upon in preference for academic education (Busia, 1969; Foster, 1965; McLaughlin, 1979). In this context Dankwah (1985) argues that unless practical solutions and the right

attitudes of Ghanaians towards vocational education and apprenticeship training are exacted, the problems of technical and vocational education will continue. The current educational reforms going on in Ghana may be symbolic of renewed commitment towards supporting technical and vocational education and apprenticeship training in Ghana.

Dankwah's (1985) orientation is supported by the report of Evans-Anfom et al. (1986, pp. 38-42) on Education which recommends that "as much attention should be given to the pupils who will go into the world of work as is given to those who carry on with the formal educational system."

These studies of Ghana's apprenticeship training and technical/vocational education identified problems in the four key areas being investigated in this study.

Studies of Other Apprenticeship Systems

The renewal of interest in apprenticeship in recent times has resulted in innovations and studies in many countries towards making various apprenticeship systems more effective. Many conferences and workshops on apprenticeship have been calling for avenues to improve the efficiency and effectiveness of apprenticeship systems. In a study and a follow-up seminar on apprenticeship in Asia and the Pacific, the ILO (1981a) surveyed the various apprenticeship systems of the countries in that region. The findings revealed

various levels of apprenticeship systems from the most advanced systems of Australia and New Zealand to the least developed of Nepal and Papua New Guinea, among others. Japan and Hong Kong follow an industry-based system of lifelong skills training. Among the findings which came out of the survey and seminar discussions were:

* Apprenticeship as an institutional form has a central place in the modern vocational training infrastructure.
* Vocational training and education must be integrated to overcome the stigma associated with apprenticeship training so that apprenticeship becomes an acceptable alternative choice to general education.
* The benefits of well planned institutionally integrated apprenticeship training far outweigh untrained apprentices.
* Linkages of training institutions with industry and between training, education, technology and employment are important for apprenticeship training.
* The ability of instructors is vital to the effectiveness of apprenticeship training.
* Apprenticeship programs need to be evaluated regularly for effectiveness (ILO 1981b, pp. 6-14)

These observations, even though made in Asia and the

Pacific Region, covered outcomes from countries ranging between the most advanced to the least developed. Their general applicability to the improvement of other systems may be appreciated.

In another UNDP and ILO (1981) study of Botswana's apprenticeship system, which is typical of most developing countries in Africa, the findings showed a lack of adequate institutional training to support the on-the-job training component. The study recommended measures that should be taken (including staff training) to strengthen the in-school or in-plant aspect of Botswana's apprenticeship system.

Other studies for effectiveness in developed societies include those conducted by Charette et al. (1987) to study the effectiveness of Saskatchewan's apprenticeship system. They found Saskatchewan's system to be generally effective but made a number of recommendations including measures to improve the in-school delivery and the on-the-job part of the apprenticeship system (pp. 2-3). In another initiative, the Saskatchewan Department of Apprenticeship (1988, pp. 11-17) organized a conference to deliberate on the future of Saskatchewan apprenticeship into the next century. A number of shortcomings were identified, and a number of recommendations touched on issues that would improve the effectiveness of apprenticeship in Saskatchewan. These issues included: the organization of the in-school and the on-the-job parts of the program; coordination between

institutions and employers; the role of advisory committees; strategies for funding apprenticeship; linking supply and demand for journeymen; a need to encourage trades training among high school students; and major technological changes occurring in industry.

Studies on Improving Apprenticeship Training

The importance of relevant and effective technical/vocational education training in apprenticeship programs is reiterated by the U.S. Office of Education (1964, pp. 206-245) which advanced that related instruction of broad educational and training relevance is increasingly becoming an important and compulsory part of training. Grabe (1981) also contended that many countries offer various forms of technical/vocational education and training which are based on their respective needs and levels of socioeconomic development. Nevertheless, irrespective of the nature or level of development, the principles of provision of vocational training are essentially the same generally.

Studies have been conducted to identify measures which contribute to improvement in apprenticeship programs. For improvement in the quality of a vocational program, the U.S. National Center for Research in Vocational Education (NCRVE) (1983, p. 12) recommends the following:

- Relevance of program to local needs.

* Participation in program development by advisory committees.
* Currency and relevance of curriculum content and training equipment.
* Qualification and competency of instructors to ensure quality of instruction.
* Types of students to ensure effective participation in programs.
* Evaluation machinery as part of the program; and
* Source of funding for support of programs.

The foregoing research findings identify elements which the NCRVE contends must be present for meaningful vocational training program improvement. In a U.S. research study to improve performance in technical and apprentice training, Oriel (1984, pp. 27-28) identified a list of criteria for an optimum system which included the following:

* Training must be based on the skills, knowledge and attitudes needed by the trainee in the trade.
* Participation by all Stakeholders in the implementation of well planned and developed curriculum.
* Development of curriculum to meet national, regional or local needs.
* Quality of instruction and correlation with on-the-job training.
* Appropriate student achievement measures.

* Regular program evaluation through research and development.

The criteria for determining program improvement for effectiveness and quality are many. Which of them are used will depend upon situational needs (Oriel, 1984). The need for improvement to ensure quality and effectiveness in training and a secure future for the trainee are also supported by Glover (1986) who argues that training for quantity without regard for quality is meaningless. In his view, "maintaining and improving the quality of training is the single most important issue in American apprenticeship because it underpins all other issues" (p. 13). In a comparative study of apprenticeship training in seventeen developed nations, Glover (1986, pp. 13-20) concludes, based on his survey, that apprenticeship programs can be improved by improving:

* The uniformity and transferability of apprenticeship training to allow for mobility.
* Instructor training and certification to improve the occupational and teaching skills of instructors.
* Training methodologies - adopting new methods of training such as modular and competency-based approaches.
* Curriculum development techniques such as DACUM to ensure relevance.

* Certification of competence of trainee as well as evaluation of program effectiveness.

In another study Worthington (1984) saw a trend in the U.S. where completion of apprenticeship training should be based on competence rather than participation in the program; and for this orientation to happen, there must, besides other factors, be improved and strong links between vocational education and private sectors. The two sectors will need to provide a joint support for curriculum development and related instructions, apprenticeship school linkage activities and research and development.

Cooperation between training institutions and industry for program effectiveness is indeed one of the central keys in formal apprenticeship. This orientation is supported by Schroeder and Butler (1987) whose study focused on the role of trade associations in vocational education programming. In their findings, trade associations and trade advisory boards are important sources for improving institutional apprenticeship training to ensure currency and relevance of programs.

In this chapter, a review of the features and the issues concerning apprenticeship training and studies of efforts to improve apprenticeship in Ghana and elsewhere have been examined. It was significant to note that the reviews of these issues and factors were focused on the four main areas being studied in this project: organization of

apprenticeship; funding for apprenticeship training; labour market requirements and efforts to promote apprenticeship. The two supplementary issues of the impact of technological change and the need for evaluation were also identified.

CHAPTER III

METHODOLOGY FOR THE STUDY

Introduction

This chapter describes the approach followed in the development and design of the data gathering instruments based on the review of related literature and the collection of data. The selection of sample respondents is also discussed.

The research project focused on identifying key issues and problems that were perceived by Ghanaian apprenticeship personnel as factors necessary for improving Ghana's apprenticeship program within the technical/vocational education system. The descriptive survey approach was employed and the collection of data was obtained through a structured interview questionnaire and through examination of documents.

Procedure for Obtaining Data

Documentary Data

Government records as well as records of selected technical/vocational training institutions and centers in Ghana were researched for quantitative data. Data obtained from Government records and training institutions included:

1. Projected enrollment of Junior Secondary School (JSS) Graduates into Senior Secondary Schools (SSS) from 1990. Appendix C.
2. List of public technical institutions under the Ghana Education Service (GES). Appendix D.
3. Approved training institutions and centres operating with the NVTI in Ghana's apprenticeship program. Appendix E.
4. Projections of trainee intake and trade courses being offered by institutions operated by the NVTI. Appendix F.
5. Number of trained and untrained teachers in the public technical and vocational institutions under the GES. Appendix G.
6. Distribution of education budget at various levels of the education system. Appendix H.

Difficulties were encountered with the collection of quantitative data from Government records related to the data listed above. Current data on vocational education and apprenticeship training in Ghana by the relevant government agencies were not readily available. However, the writer was able to get adequate information relevant to the study.

Interview Data

The main procedure used in the study was the collection of data through interviews using a structured questionnaire.

This approach enabled the researcher, as much as practicable, to ask similar questions of respective respondents.

The researcher had the opportunity to be in Ghana during the study and the interview approach offered a direct contact between him and significant respondents who were knowledgeable about Ghana's apprenticeship. It also enhanced the establishment of rapport and offered the opportunity to clarify a number of issues and to get reaction to the points raised during the interviews. The interview method also enabled the researcher to tape record responses for analysis later.

Construction of the Interview Questionnaire

The interview questionnaire items were developed through the review of literature and through discussions in Saskatchewan with technical/vocational educators, personnel of the Saskatchewan Apprenticeship Department and other individuals who were knowledgeable about apprenticeship training programs. The first pilot testing of the structured interview questionnaire was conducted by sending copies of the developed questionnaire to a sample of ten individuals connected with apprenticeship and vocational education in Saskatchewan. The return rate was eight out of ten (80%).

The feedback from the pilot testing was used to develop

the structured instrument which contained the core questions for the structured interview. To acquire some interviewing practice before leaving for Ghana, the researcher conducted pilot interviews with three apprenticeship instructors of the Saskatchewan Institute of Applied Science and Technology (SIAST) (Palliser Campus)in Moose Jaw and a fourth respondent, a retired vocational educator in Regina. Copies of correspondence regarding the pilot testing are shown in Appendix A. The final questionnaire items were regrouped to be administered to respondents in Ghana according to categories of administrators, employers and apprentices/artisans. A copy of the structured interview questionnaire is included in Appendix B.

Description and Selection of the Respondents

Respondents for the study were selected from the range of personnel connected with apprenticeship training in Ghana. Participation was on a volunteer and availability basis and was dependent on the willingness of the respective respondents to spare their time for the survey interview. To ensure a cross-section of responses and opinions, the sampling frame was based on representative sampling of personnel who were actively involved in apprenticeship and technical/vocational education training in Ghana. Twenty respondents were interviewed as indicated in Table 1.

TABLE 1 LIST OF RESPONDENTS INTERVIEWED IN GHANA

CATEGORY	NUMBER (SIZE)	RESPONDENTS
a.	3	Representatives of Department of Apprenticeship: 1 - Director of Apprenticeship 1 - Commissioner for Apprenticeship 1 - Apprenticeship Inspector
b.	1	Representative, Dept. of Labour
c.	1	Representative, Dept. of Education (Voc/Technical Division).
d.	3	Principals/Representatives of Technical/vocational Training Institutes
e.	3	Representatives, Trades Advisory Committees
f.	3	Representatives, Employers of Apprentices and Employers' Association
g.	3	Representatives, Journeymen/ Craftsmen/Unions
h.	3	Representatives, Final Year Apprentice Trainees
TOTAL	20	Respondents

Collecting the Data

The process of data collection in Ghana was preceded by an introductory letter to respective departments and individuals requesting their voluntary participation in the survey. A copy of the letter sent to respondents prior to the arrival of the researcher in Ghana is shown in Appendix A.

On arrival in Ghana the researcher personally contacted the respective respondents at which time he set up a

schedule for conducting the interviews. Each interview lasted a maximum of 60 minutes. The interviews were recorded to preserve the details and to permit the researcher to focus on the questioning. Notes were taken to supplement clarification of the recorded data. All interviews were conducted with the assurance by the researcher that anonymity would be maintained by reporting data in the aggregate and that no information would be attributed to any particular interviewee or respondent.

CHAPTER IV

FINDINGS FROM THE INTERVIEWS

Introduction

This section describes the major findings which were perceived by the 20 respondents as being of concern and critical to the improvement of the apprenticeship system in Ghana. Four main areas of apprenticeship were investigated. These were: Organization of Apprenticeship; Financing of Apprenticeship; Labour Market Requirement; and Promotion of Apprenticeship in Ghana. Supplementary areas which were also investigated were Technological Change and Evaluation of the Apprenticeship Programs.

General Comments and Suggestions from Respondents

The various categories of interviewees responded to the areas in specific detail. However, certain key issues and problems appeared to be consistently identified by all interviewees.

All interviewees were unanimous in indicating that there were major problems with apprenticeship training in Ghana. Their observation was that apprenticeship training had not been given the necessary attention that it deserved and had, therefore, not been as effective as it should be. Although the NVTI under the Ministry of Mobilization and Social Welfare has been charged with the responsibility for

apprenticeship training in Ghana, the apparent lack of impact of apprenticeship was a reflection of the lack of a strong and definitive national policy on apprenticeship training.

Other major issues or problems were:

* The lack of commitment on the part of the Government, Industry (Employers) and the Trade Unions (including Trades Associations) towards Ghana's apprenticeship training.
* The lack of funding to enable the apprenticeship system to function minimally. This has created a critical lack of both human and non-human resources covering all aspects of the apprenticeship program.
* The lack of co-ordination among the various technical/vocational training and manpower agencies particularly between the NVTI and the GES, resulting in ad hoc training. The situation has created a wasteful duplication of efforts without a significant impact on the effectiveness of apprenticeship training. The outcome is a serious drain on Ghana's rather limited resources.
* In view of the lack of effectiveness or impact by the public institutions, a trend is evolving whereby major private firms and employers are beginning to do their own training to meet their individual respective needs with serious implications for Ghana's future manpower

requirements.

* Because of rather difficult economic conditions and low industrial productivity with the attendant unemployment situation in Ghana, many employers are reluctant to engage in apprenticeship training. For example, during the investigation, it was revealed that of the three year cumulative total of 3500 trainees under the NVTI as at August, 1989, only 30% of them were registered apprentices with the rest pursuing pre-employment vocational training.

The combined effect of the foregoing has created a rather low ebb in apprenticeship training in Ghana. All respondents indicated that the whole system needed urgent attention for improvement and 80% of them emphasized that unless definite measures were taken to address these critical issues, all other efforts at improving Ghana's apprenticeship system would be in vain. Some of the key suggestions by respondents for improvement of the system included the following:

* There was an urgent need for the institution of a national manpower training policy out of which a committed and definitive policy for apprenticeship training might evolve as a fundamental requirement towards implementing and improving a truly national apprenticeship program in Ghana.
* There is an urgent need for a national policy on the

funding of apprenticeship training. This policy may culminate in the institution of a national training fund into which may be obligatory contributions (levy) from industry and various categories of employers. The terms and conditions must be attractive and considered worthwhile by contributors. Alternately, the training fund might be derived from public contributions in the form of training tax for technical and vocational education, contributions from employers, unions, trade/occupational associations, among other contributors.

* The training fund, into which the Government will also provide some grants, must be administered by a national body for technical and vocational education which should be established to administer a national manpower training policy.
* Besides the national training fund, Ghana will continue to need assistance from international donor agencies and will have to pursue such initiatives as supplementary sources for apprenticeship training.
* Ghana's existing apprenticeship regulations will need to be reviewed and made relevant to the current manpower needs of the country.
* To avoid duplication of training efforts with attendant wastage of rather scarce and limited resources, there will be the need for coordination among all agencies

engaged in manpower planning, technical/vocational enducation, and apprenticeship training programs. This coordination is especially needed between the Ministries of Education and Mobilization and Manpower Planning for the pooled and economic use of resources. For such coordination to happen, there must be a high powered national coordinating body or council to be responsible for all levels of Ghana's technical education and vocational skilled manpower training schemes.

* Ultimately, there will be the need for commitment and support on the part of the Government, Industry (Employers) and the Trades Unions and Trades Associations towards the improvement and success of apprenticeship in Ghana.

Organization of Apprenticeship in Ghana

Under this key area, the researcher investigated issues related to in-school training, on-the-job training, enforcement of apprenticeship regulations, testing and certification, institutional linkages with industry and the role of trades advisory committees in apprenticeship training. The following are the issues and problems identified by respondents regarding the various elements and what they perceived as being necessary to mediate those issues and problems.

In-School Training

The respondents were asked to identify issues and problems which they perceived as being necessary for improving the institutional or in-school training aspects of Ghana's apprenticeship training. The following were the main responses in terms of issues, problems and what they felt needed to be done toward improvement.

One of the major problems has been the lack of funds to enable it to function minimally. This situation has resulted in a very critical lack of training resources. Training equipment is lacking in most training institutions and, where it is available, it is obsolete and inadequate. There is also a serious lack of training materials and related tools, books and aids. There was also a lack of a maintenance schedule for existing facilities.

Another major issue needing serious attention was the problem of staffing where mostly inexperienced teachers were doing institutional training. Of the total respondents (N=20), only two (10%) thought that the instructional staff of the technical/vocational institutions were adequately prepared for effective training in the institutions. The other 18 (90%) of the respondents indicated that a majority of the technical/vocational instructors, although having requisite qualifications, were lacking in practical experience. There was also a lack of pedagogical (teacher) training skills amongst most of the instructors. Thus, a

major issue was the problem of inexperienced teachers doing institutional training. Appendix G shows the extent of untrained teachers in the technical/vocational institutions in the GES. The problem is being exacerbated by the loss of well qualified and experienced instructors to industry due to lack of incentives and the attraction of higher remuneration and better working conditions in industry.

The content and relevance of institutional training programs were other major issues which respondents identified as needing urgent attention for improvement in Ghana's apprenticeship training. There was a lack of relevance of content to local and industrial needs; the programs were too theoretical with little or no practical content, making the trainees unproductive in industry. There was hardly any curriculum renewal, nor was there any evidence of input into curriculum from industry during the past decade. Attempts were made in the 1970's by the NVTI to develop curriculum to meet apprenticeship training standards as a basis for curriculum development and renewal. No other known development or renewal attempts have been made since then.

A fourth issue under in-school improvement related to students. In the view of 12 (60%) of the respondents, the types of students entering into the apprenticeship program must be the right age (between 15-25 years), of right attitude, motivation and possess the necessary basic skills.

It was observed that most of the students tended to look down upon apprenticeship trade or craft programs and to feel they were inferior to polytechnic programs; other students did not appear to be serious about their programs, displaying a lack of attendance and indiscipline. Poor students were one of the reasons for the low regard for apprenticeship training in Ghana (Dankwah, 1985).

With respect to the foregoing issues and problems, relating to the in-school aspect of apprenticeship training, respondents made the following observations as actions necessary to improve the in-school training aspect of Ghana's apprenticeship system.

On the issue of training resources, respondents identified the need for:

* The rehabilitation and refurbishing of training equipment, tools and aids to make training productive and relevant to the needs of industry. There must also be a regular schedule of maintenance of existing equipment.
* The provision of funding for adequate supply of training materials for hands-on practical training. In this connection, until alternate sources of funding have been identified, respondents were of the opinion that the Government must endeavour to provide the necessary minimally adequate funding.

On the issue of staffing, respondents emphasized the

need for the following:

* An organized staff development program both in practical (occupational) training through industrial attachments and pedagogical (teacher) training of existing instructors. Presently it is ad hoc.
* Recruitment of new instructors with appropriate qualifications and experience into the training system.
* Provision to invite experts from industry to participate in in-school training -- perhaps as a basis for exchange of staff between schools and industry.
* Provision of comparable remuneration to that of counterparts in industry to help attract better qualified staff into institutional training.
* It was also suggested that administrators be given in-service training and seminars to provide improved leadership in the delivery of training programs.

For improving the content of in-school training, respondents saw the need for:

* Institutional training to be more practical and relevant to the needs of local industry. For this to materialize, there is need for institutions to liaise with industry and unions to make institutional apprenticeship curriculum relevant to industrial needs through trade advisory committees.
* The establishment of production units within institutions to provide avenues for practical

and a possible training ground for eventual self-employment of graduate apprentices.

* Review of content of training programs to ensure relevance and currency of industrial practice to keep up with technological developments every 5 years. For this to happen, there will be the need to include, establish, equip and properly staff a curriculum development department in the apprenticeship system.
* NVTI to co-ordinate with training institutes, GES and industry for improvement in content of courses.

On the question of improving the quality of students entering into apprenticeship programs, respondents indicated the following:

* Students must be screened to ensure that those entering into the program are properly oriented and motivated.
* Guidance and counselling must be a necessary component of secondary schooling.
* Students need to be encouraged and supported through their apprenticeship training.

<u>On-the Job Training</u>

Respondents were asked to identify what they perceived as the main issues and problems for improving the on-the-job aspects of Ghana's apprenticeship training. There were indications of some existence of on-the-job apprenticeship training but the general consensus was that it lacked

organization, structure, content and coordination. There was also a serious lack of trained training supervisors (artisans or journeymen) to supervise on-the-job training in industry. There was limited access to on-the-job opportunities for the trainees due to current economic difficulties.

Another issue was that employers were generally not interested in entering into apprenticeship contracts because of perceived obligations. A compromise situation is now to allow apprentice trainees to be attached to an employer just for practical experience without an apprenticeship contract. This is a serious problem which is perceived as contributing to the near collapse of Ghana's apprenticeship system.

Lack of inspection due to problems of mobility and technically qualified personnel was another problem identified by respondents.

To improve the on-the-job (OTJ) aspect of Ghana's apprenticeship system, respondents identified the need for:

* Employers to be educated to be aware of their responsibility towards the training of apprentices.
* Training of qualified and experienced supervisors in industry to supervise OTJ training in industry - a strong core of highly skilled personnel in industry to do OTJ training and liaise with training institutions.
* Establishment of links between industry and technical/vocational training institutions.

* OTJ training to be structured, planned and coordinated to complement the in-school apprenticeship training within the context of a nationwide policy as to facilitate trainee job placement and follow-up. The structured OTJ training scheme, once developed, must be strictly adhered to by both industry and training institutions.
* Inspection of OTJ training to be improved by training of requisite staff and provision of resources to facilitate such activities.

Apprenticeship Regulations and Bonding

On Ghana's apprenticeship regulations, respondents were asked to identify what they perceived as the issues and problems that were to be addressed for improvement of the program. The major issue was the question of application or enforcement of the regulations. All respondents indicated that the regulations appeared to exist only in name and they were neither being applied nor enforced; as a result, there was the tendency for a lukewarm attitude towards apprenticeship generally.

On the issue of bonding of apprentices by legally committing an apprentice to serve an employer for a specified period, respondents were divided on its continued enforcement within the Ghanaian system. Of the 20 respondents, six (30%) of them were not in favour of bonding

apprentices with the remaining 14 (70%) of them being in favour. The reasons for those not in favour of bonding included the fact that; (a) apprenticeship training is a responsibility that should be obligatory for both the Government and employers; (b) bonding is seen to be presently necessary because only a few employers are currently participating in apprenticeship training; and (c) bonding is restrictive both to the trainee and employer, and limits the potential and mobility of the trainee.

Those respondents in favour of bonding were of the view that it would ensure some commitment on the part of the trainees and their guardians during and towards completion of the training. Bonding would also enhance training cost recovery for employers and thereby motivate employers towards apprenticeship training; it would also ensure both trainee and employer protection. Ultimately, respondents were of the view that the bonding fee paid by the apprentice could be refundable in an improved compulsory system involving most employers.

For an improved apprenticeship system, respondents were of the view that Ghana's apprenticeship regulations would need to be reviewed to reflect the situational needs of Ghana.

The issue of bonding will need to be addressed in the context and reviews of regulations or developments that might evolve in the apprenticeship system.

Testing and Certification

Respondents were asked to identify what they saw were the key issues and problems with the testing and certification processes of Ghana's apprenticeship system. The response rate was 12 (60%) of the respondents as the remaining eight (40%) did not feel knowledgeable enough to respond to this area of the investigation. The general consensus of the 12 was that Ghana's apprenticeship testing and certification processes, administered by the NVTI, were rather ineffective and needed to be improved.

On the issue of testing, respondents identified one of the problems to be the lack of qualified and trained personnel at the NVTI to develop and administer tests. The focus of the present system is not on testing for practical competence. The tests are mostly on theory which is sometimes irrelevant to the needs of industry with the result that standards of apprentice graduates tend to be rather low. Because of lack of adequate inputs for practical testing, trainees are made to provide their own inputs for testing and choice of locations; and such materials tend to vary in sizes and quality thereby creating serious problems of consistent standards. Security of testing was another source of concern.

The issues of certification were similar to those of testing since the former is a logical sequel to the latter. There was concern for the security and credibility of

apprenticeship certificates issued by the NVTI, resulting in a lack of recognition of level and value of the certificates in industry. Another concern was the lack of progression in apprenticeship certification, resulting in most technical and vocational institute trainees (including NVTI trainees) drifting to the City and Guilds Certificates offered by the GES and which are better recognized by industry.

A number of recommendations were suggested by respondents as to what they perceived could be done to improve the testing and certification of apprentices in Ghana. The following were suggestions by respondents:

* The NVTI as a body with legal mandate for apprenticeship testing must develop the capacity to be able to effectively test and certify apprentices to industrial standards. To be able to function in that capacity, the NVTI will need to develop a core of well trained professional test developers and administrators. It will be necessary to link up with the Technical Examinations and Curriculum Units of the Ghana Education Service which have well developed staff of experienced technical examiners.
* There will be the need to involve experienced personnel from industry to team up with trained testing personnel from NVTI and other institutions to form independent testing committees to ensure that testing procedures and standards meet with industrial requirements.

Other suggestions were:

* Apprenticeship testing must be practical (performance oriented) and relevant to the needs of industry; the trainees must be able to perform to industrial standards. As well, trainees must be equipped so that they are able to solve lifeskill problems.
* Where feasible, practical testing should be done in the industrial environment at OTJ sites for quality and relevance for certification to be more acceptable.
* Apprenticeship testing must be more project oriented and must be oriented towards application of knowledge and skills to problem-solving rather than only towards factual information.
* Apprentices should be continuously assessed in industry on their respective job experiences by their employers. A final testing at a training centre would then supplement the formative assessment for certification.
* Criteria should be developed to identify which of the 70 trades identified by the NVTI may be designated as apprenticable trades for testing and certification.

Linkages Between Vocational Training Institutions and Industry

Respondents were asked to indicate to what extent they perceived the existence of links between training institutions and industry and how the links may be improved. Twelve (60%) of respondents indicated little or no existence of links between training institutions and industry; while eight (40%) indicated existence of some links between a few training institutions and industry. Even for those institutions where there are links, the linkages were rather weak and ineffective. There was 100% response agreement on the importance of close links between training institutions and industry for improvement in Ghana's apprenticeship system.

The following were the key suggestions which respondents perceived as some of the necessary actions towards developing more effective linkages between technical/vocational training institutions and industry. There will be the need for:

* Regular and active dialogue between training institutions and industry.
* Active involvement of industry in curriculum development, testing and certification through trade advisory committees.
* Active invitation of industry's involvement in institutional programs through activities like open

days, employers' days, speech and prize giving days, etc. Industry also should invite institutions to industry to promote awareness of developments.

* Creation of industrial linkage departments within institutions to be manned by industrial liaison officers or vocational coordinators. These are presently either very weak or non-existent in most institutions.
* Industrial representation on various councils and committees of the apprenticeship system.
* Attachment of training instructors in industry to upgrade knowledge and skills.
* Invitation of occupational experts in industry to instruct at training institutions as guest lecturers.
* Industry to be educated to become interested in training and to be aware of its responsibility to apprenticeship training and the benefits to be derived by industry from an effective apprenticeship training, through seminars, workshops, conferences, etc.
* Besides national advisory committees, each institution should have a trade advisory committee to advise it on local industry within the district or region where the school is situated; as well, personnel from industry could serve on various school committees.

In all efforts, institutions must make proactive efforts towards involving industry in institutional training

programs. Active institutional and industrial relationships on reciprocative basis must be encouraged through a Government initiated policy.

Status and Role of Trade Advisory Committees

Respondents were asked to respond to the status and role of trade advisory committees in Ghana's apprenticeship system and to indicate what could be done towards improving their effectiveness in the system. Sixteen (80%) of the participants responded to the issues on trade advisory committees and they were all unanimous in the importance of trade advisory committees in Ghana's system; but they regretted, however, that the various committees that had existed had become defunct and ineffective during the past ten or so years. This was partly due to the internal dynamics of the NVTI and its rapid personnel turnover. The lack of financial incentives to attract or maintain qualified members' active participation and the appointment of inappropriate persons to trade advisory committees were also identified. Suggestions for improvement included the need for:

* Revival and reconstitution of the various trade advisory committees.
* Membership on the committees from industry or occupations must be by nomination by industry or respective occupational associations.

* Membership from industry or occupations to be based on demonstrated trade and industrial experience, interest, commitment and qualifications of personnel who can make significant and relevant suggestions to improve upon the training.
* Institutional staff to be exposed to industrial and occupational developments to enable them to offer effective contributions to committee meetings.
* Provision of financial incentives to enhance regular attendance and participation of members in meetings, seminars, workshops and involvement in school training related activities.
* Mandatory submission of reports of meetings on various activities to the reconstituted National Apprenticeship Council.

Funding of Ghana's Apprenticeship System

Funding was considered as one of the most important areas to be addressed towards improving Ghana's apprenticeship system. Technical and vocational institutions in the public system have been poorly funded, at less than 5% of education budget over the years (Ramsay, 1983). For example, since 1985, these institutions have been funded at an average of 1.47% (less than 2.5%) of the entire education budget as against 12.07% for secondary education; 1.72% for diploma awarding colleges and 12.52%

(between 1985 and 1986) for higher education. Even when funding for the polytechnics is added to that of the technical and vocational institutions, the level comes up to only 2.17% of the total education budget (See Appendix H). The main concern of respondents was therefore the lack of a funding mechanism to support technical and vocational education and apprenticeship training in Ghana. The following issues were investigated.

Financing of Ghana's Apprenticeship

The issue of financing apprenticeship programs was identified by all 20 respondents to be one of the major problems plaguing Ghana's apprenticeship system. Other shortcomings under financing were the lack of policy on funding for apprenticeship and inadequate minimal funding support from Government. However, respondents observed that, in view of economic difficulties, the Government could not be expected to support apprenticeship all alone. Another concern was the lack of interest on the part of employers and unions regarding funding for apprenticeship training due to general loss of confidence in the present system.

Funding Roles of Various Agencies

On the issue of roles to be played by identifiable agencies or groups in the future funding of Ghana's

Apprenticeship Programs, respondents gave the following responses.

Government. 100% of the respondents (N=20) indicated the moral responsibility of the Government to support apprenticeship training. However, the general consensus was that the Government should not go at it alone; its effort must be supplemented with contributions from industry and elsewhere. The level of Government support suggested by respondents ranged from 80% to 50%, the level of government support being gradually reduced to 50% with corresponding progressive increase in the national economy.

Employers (Industry). 100% of the respondents (N=20) indicated that, while it is the moral responsibility of government to train for skilled manpower, it is the duty of employers and industry to ensure a continued stock of supply of skilled labour for industrial and occupational production. In this connection, respondents were of the view that industry and employers, as the main users of skilled labour, should be made to assume their moral duty of supporting the Government in contributing towards apprenticeship training. Present employer contributions should be approximately 35% and as the national economy improves and industrial and occupational productivity progressively improves, their contribution to

apprenticeship funding should increase to 80%.

Unions. Respondents were divided in their perceptions of the role of the unions in apprenticeship funding. Ten (50%) of them (N=20) were for unions contributing 5% to 20% of apprenticeship costs from union dues into a fund for continued and improved apprenticeship training. The other ten (50%) respondents were of the view that unions should not be made to contribute financially towards apprenticeship but should be made to monitor activities which would ensure regular contribution by employers and the monitoring of the welfare of apprentices and training initiatives.

Apprentices. Fifteen (75%) of the respondents (N=20) were of the view that apprentices and their guardians or parents must be made to contribute a token amount of 1% to 5% of training cost through training fees to ensure their commitment and appreciation. Respondents were of the view that "free training" is very often abused and not appreciated. The other five (25%) respondents were not totally against some token payment by apprentices. They felt commitment and appreciation could be attained through bonding especially if a deposit would have to be paid as a fee.

Measures to be Taken in Funding Ghana's Apprenticeship

On the question of the measures to be taken in addressing the issue for funding Ghana's apprenticeship training, the following were the views expressed by respondents.

* Government must take greater responsibility for the training of apprentices than it has been doing so far. However, the Government cannot do it alone and must seek support from other sources in view of the high cost of training.
* Training must also be the joint responsibility of industry as major beneficiaries of training. Government must therefore make industry contribute towards apprenticeship training even during the present economic crisis as the trained manpower will enhance economic growth.
* Besides the foregoing proposals, funding for apprenticeship training in schools may be supplemented with:
  - Students' training fees.
  - Sale of students' products and skills from training and production units activities.
  - Loans to training institutions from government to be repaid in kind with services by the schools.

In spite of the alternatives suggested, the main concern of respondents was the need for the establishment of a training

fund or levy with contributions from industry (employers) and the Government.

Labour Market Requirements

Investigations conducted under this section were to find out how the apprenticeship training was related to labour market needs and how this relationship could be improved. The main issue was a lack of coordination among the training and manpower agencies. There was therefore the expressed need for coordination in training to avoid wasteful duplication of training efforts.

Linkage of Apprenticeship Occupations With Labour Market Demands

Coordination of various apprenticeship occupations with labour market demands was considered as being virtually non-existent at present. The various training agencies both in the public sector under the Ministries of Education, Mobilization and Social Welfare and other Government Departments and in the private sectors train for various occupations without any regard to the needs of the labour market and industry. The researcher came across some records of labour market surveys which had been initiated by Ghana's Statistical Service on the one hand and by the Statistics section of the Department of Labour. These results appeared neither coordinated nor being applied by the various training agencies. The situation of ad hoc

training has created a wasteful duplication of training efforts by public organizations resulting in a serious drain of Ghana's rather limited resources.

Another observation was that, because of difficult economic conditions, relating training outputs to labour market demands is difficult as the labour market is unstable. The tendency is presently less towards formal wage employment training to more self-employment entrepreneurship training. This trend was identified by the researcher as a positive indicator towards a basis for a national training scheme for the development of small scale enterprises for Ghana's economic development.

How Ghana's Apprenticeship Training Links With the Labour Market May be Improved

This issue was considered very important and critical to the effectiveness and success of any apprenticeship program renewal that may be initiated. Unfortunately, since there was no evidence of any significant system of relating Ghana's apprenticeship training output to labour market demands there was no basis for indicating activities towards improvement. However, the following initiatives were considered necessary towards relating Ghana's apprenticeship training to labour market and occupational demands.

* The lack of a national manpower training policy is a national issue that must be addressed. Within the same

framework must be a policy for a national apprenticeship training system that must be set up to address the urgent need for skilled manpower.

- There is the need for the reactivation of Ministry of Finance and Economic Planning Manpower Planning System to facilitate realistic training demands and projections.
- There will be the need for the establishment of occupational manpower statistical database between the Ministry of Finance and Economic Planning, Ministry of Education and the Ministry of Mobilization and Social Welfare to improve the matching of training with manpower needs. A scheme of Manpower Information Systems among the three Ministries will be necessary to advise training agencies as new and existing skills come in demand.
- There must be a trend of training towards small-scale industries and self-employment since the economy is in a state where the formal wage earning sector cannot employ or absorb all the trainees that will be trained in a national apprenticeship scheme. The trend must be towards small-scale entrepreneurship training.

To avoid duplication of training efforts and wastage of limited resources, there will be the need for coordination among all agencies of manpower planning and technical/vocational and apprenticeship training programs

especially between the Ministries of Education and Mobilization and Economic Planning for pooled and economic utilization of resources. For such a coordination to happen, there will be the need to set up a body or council to have overall national responsibility for technical and vocational education and skilled manpower training at all levels in Ghana.

Promotion of Apprenticeship Training in Ghana

Despite acclaimed recognition in its contribution to national socioeconomic development, the concept of apprenticeship training presents an image of a program for the "poor academic achiever" or "the-never-do-well" drop-out in school. There are many examples of such misconceptions of apprenticeship in the literature and this negative connotation is even worse in Third World countries of which Ghana is no exception. Therefore, if apprenticeship is going to be given the kind of rightful recognition it deserves in the structure for Ghana's economic recovery and development, then there must be deliberate and conscious efforts towards promoting the concept of the importance of apprenticeship training.

Strategies to Improve the Image of Apprenticeship Training in Ghana

Respondents identified the following approaches as a means of promoting apprenticeship training among the identified groups in Ghana.

Employers. For employers, the following were suggested as a means of encouraging them to see the value of apprenticeship.

* There must be a national policy on apprenticeship training out of which may emerge strategies like workshops and seminars to educate employers to see the value and benefits of apprenticeship training in terms of profits and productivity and national development. Employers must be made aware of their obligation to apprenticeship training as consumers of such skilled manpower and the benefits of continuous supply of such skills.
* Although it is a duty for an employer to train apprentices, the conditions of training apprentices must be made attractive and encouraging. Conditions must be advantageous to participate through incentives like tax rebates, etc., with penalties for non-participation. The quality of apprentices must be attractive and relevant to the needs of the employer and industry.

* Involvement of employers (and industry) in school training activities.

The Youth. The following suggestions were made to attract youth to apprenticeship training:

* There should be education of youth through career guidance and counselling about the importance and the economic benefits in apprenticeship training.
* Introduction of more attractive wage structures for technicians and craftsmen occupations.
* Positive role modelling of successful personalities who have "made it" through apprenticeship training.
* Societal recognition of the value of apprenticeship training through national competitions like the "Best Apprentice Award" and comparative recognition as given to other academic and social structures.
* Creation of opportunities for upward mobility through apprenticeship training such as lifelong education through training and retraining; in other words, the creation of new career structures tilted in favour of technicians and craftsmen, as was done in Japan's and Germany's reconstruction after World War II.

The General Public. There will be the need for public education through various media campaigns about the

importance of apprenticeship training in national development and to destigmatise technical, vocational and apprenticeship training.

* Government officials and policy makers to be lobbied to become more aware of the importance of apprenticeship training.
* There is the need for a change in attitudes of the public towards technical, vocational and apprenticeship training.

Summary for the Four Main Areas

Four main areas, namely, organization of apprenticeship training, financing of apprenticeship, labour market requirements and promotion of apprenticeship training in Ghana provided the main framework for the interviews. The following were the major issues that were identified by respondents as being common to all the areas:

* The lack of a national manpower training policy resulting in attendant lack of an effective national apprenticeship training policy .
* The lack of a funding mechanism.
* The lack of coordination.
* The lack of tripartite commitment.

These issues have contributed to the present state of ineffectiveness of Ghana's system.

Under the area of Organization, problems relating to

improving the in-school training and on-the-job training, among others, were identified. In the area of Funding, the major problem was inadequate financing and the need for identifying other sources of funding, especially from industry, to supplement Government efforts. In terms of Labour Market Demands, lack of a national training policy and its relationship to apprenticeship training, were identified as the main problems. Problems under Promotion of Apprenticeship were related to the lack of education of the employer and poor attitudes of the general public regarding the importance of apprenticeship training in Ghana's socioeconomic development and the need to create incentives and campaigns for its acceptance in manpower development.

Technological Change and Evaluation

Besides the four areas discussed above, two other supplementary areas were also investigated. These were the impact of technological change on Ghana's apprenticeship program and its evaluation. These two areas were considered to be supplementary in the context of Ghana being a developing country where technological change is not as rapid as in advanced countries and where formally organized and well established apprenticeship training is still in its formative stages. In advanced societies where apprenticeship is firmly established, the impact of

technological change and evaluation of apprenticeship programs assumes major importance.

Nevertheless, the researcher considered the areas of Technological Change and Evaluation of Ghana's apprenticeship system as worthy of some exploration. The response rate was 100% (N=20) for technological change while that for evaluation was 60% (N=20). The following were what respondents suggested:

Technological Change. To enhance technological change in Ghana's apprenticeship training system as appropriate to Ghana's level of development, respondents suggested measures similar to those for improving in-school training with emphasis on the following:

* There is the need to improve institutional links with industry through Trade Advisory Committees and other linkage strategies to make training current and relevant to developments in industry and occupations.
* The need exists to upgrade teaching staff through staff training programs.
* The need exists to upgrade training equipment and other training facilities to match current developments both within Ghana's immediate needs and outside Ghana (within reason) for international standards as Ghana cannot operate in

isolation.

* Besides the foregoing which were expected to be effected within Ghana's resources, there was the expressed need for training institutions in Ghana to establish linkages with training institutions in advanced countries for support and exchange of staff and ideas to the mutual growth of the respective institutions.

Evaluation. Evaluation of the apprenticeship system in Ghana has been practically non-existent. However, twelve (60%) of the respondents saw the importance of systematic evaluation as being necessary for improving the system and suggested that there was the need:

* To establish a policy to evaluate various aspects of the program periodically.
* To train personnel and establish a department within the system to undertake evaluation activities.
* To develop standardized evaluation instruments to facilitate regular evaluation of the program every 3 to 5 years.
* For government and all concerned to take outcomes of evaluation studies for improvement seriously for any meaningful improvement of the system.

In general, there must be instituted a strong national manpower and apprenticeship training policy and a

demonstrated commitment on the part of all concerned, especially the Government, Industry (Employers), Unions (Workers) and the general public, to make apprenticeship work effectively and contribute towards Ghana's economic growth.

CHAPTER V

DISCUSSION OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This chapter discusses the findings of the investigation into Ghana's apprenticeship system. It links these findings with the experiences of other countries and with studies that have been conducted on apprenticeship systems in both developed and developing countries. Conclusions are drawn and recommendations are made for the consideration of Ghana towards renewing her apprenticeship system in the 1990's.

Major Findings From the Study

The major findings identified during the interviews of the respondents which are fundamental to the improvement and effectiveness of Ghana's apprenticeship system are: the need for a definitive national manpower training policy to support apprenticeship training; the need for a funding mechanism or policy to support Ghana's apprenticeship training; the need for coordination in the use of training resources; and the need for commitment to apprenticeship training. Respondents considered these issues as being very important and the concensus was that unless they are seriously addressed, any other attempts at improving Ghana's apprenticeship training will be in vain. These findings are

elaborated upon in the following discussion.

The Need for a Definitive National Manpower Training Policy to Support Apprenticeship Training

The study found that, for an apprenticeship system to function in a nation's manpower development structure, it must be backed by a definite national policy framework within which it may operate. Canada's Skill Training for the 1980's outlined a policy framework in the beginnings of the 1980's (Axworthy, 1982). Kiesewalter (1978, pp. 29-33) and Norton and Butler (1981, pp. 31-34) emphasize that the strength of apprenticeship training in most European countries and especially in West Germany has been dependent on definite and proactive policies. There must be deliberate efforts at enacting policies which will promote apprenticeship training. In a study of policies on apprenticeship, Ruebens (1979, p. 77) argues that the "legislative establishment of schemes to offer adults opportunities to enter apprenticeship . . . does not necessarily yield the numbers of skilled workers required by the economy if obstacles to their acceptance cannot be overcome."

From a developing world perspective, apprenticeship experts meeting in Asia (ILO, 1981b, p. 6) noted that in addition to government regulatory provision, the need for a policy framework to "ensure a satisfactory training

programme" was essential. In a study relating foreign countries' apprenticeship experiences to those of the U.S.A., Ruebens and Harrison (1980, pp. 65-68) indicated that there was "a correlation between supportive infrastructures and pervasive apprenticeship programs." From the foregoing, it may be advanced that for Ghana's apprenticeship training to make any headway, it must be supported by a national training policy.

The Need for a Funding Mechanism/Policy to Support Ghana's Apprenticeship Training

The study found there was a lack of necessary funding support and this was seriously hampering Ghana's apprenticeship program. Literature indicates support for apprenticeship training by funding between governments and industry (Baker, 1981; Canadian Vocational Journal, 1989; ILO, 1981b; Reubens & Harrison, 1980; Weiermair, 1984). In a study of apprenticeship funding in OECD Countries, Reubens (1979) posited that employers and unions have normally been responsible for the cost of training in industry while governments have catered for the in-school training of apprentices as part of public education.

The trend in recent times has been for governments to institute funding mechanisms with built-in incentives to encourage industry/employers' greater participation and stability in apprenticeship training. Reubens (1979, pp.

50-68) cites collective financing for apprenticeship in the United States in the form of pooling of voluntary contributions from employers and unions; in the United Kingdom the Industrial Training Act of 1964 initiated the levy-grant system with financial contributions from the government in 1973; Ireland introduced the levy-grant system with the introduction of its industrial training authority, "AnCo" in 1967. Based on the Edding Commission's recommendation in 1975, Germany introduced the levy-grant system with 1% levy on employers' wage-bills. France imposed a general apprenticeship tax on employers with tax rebates and subsequent social security contribution exemptions to those who participate in training apprentices. In addition to efforts to spread training costs evenly among participating and non-participating firms in apprenticeship training, government support has also been provided as it is acknowledged that "the community should support the technical costs of apprentice training as it supports education for the professions and sub-professional occupations" (Reubens, 1979, p. 63).

Other funding strategies in the Asia Pacific Region are cited by ILO (1981a). The Australian Commonwealth Rebate for Apprentice Full-Time Training (CRAFT) Scheme provides tax-exempt subsidies to employers for apprentices' in-school training; Fiji, Singapore, Sri Lanka, Pakistan, India and Hong Kong have all instituted a levy grant/tax form of

funding their respective apprenticeship systems (pp. 58-61). Grabe (1981, p. 146) also reports on apprenticeship levy strategies in Kenya and Nigeria.

The importance of strategies for apprenticeship funding in Saskatchewan, Canada, was highlighted by Charrette et al., (1987, p. 12) who recommended the institution of a "Training Trust Fund," and by the Saskatchewan Department of Apprenticeship (1989, p. 13) which also called for the establishment of "an apprenticeship fund." The proposed apprenticeship fund was to be set up by the Federal and Provincial Governments, industry (employers) and unions (employees). It was to be administered under a joint advisory board and used to finance apprenticeship training in Saskatchewan.

Strategies for central funding from other countries include tax incentives, payroll taxes, skills development fund (ILO, 1985) and a percentage of construction contracts contributions by trades members (Glover, 1986). The foregoing, including others to be discussed under the section on the funding of Ghana's apprenticeship, are examples by which apprenticeship training is being financed by various countries.

The Need for Coordination of Resources for Effectiveness

The study found that to attain effectiveness in any apprenticeship training program, there must be coordination

of resources between apprenticeship and vocational education agencies (Baker, 1981; ILO, 1981a; Norton & Butler, 1981; Reubens & Harrison, 1980; Westbrook & Butler, 1981; Weiermair, 1984). Too often there is a tendency on the part of technical/vocational authorities to function in isolation, duplicating the efforts of apprenticeship agencies or vice versa. In these days of scarce resources and accountability such wasteful duplication cannot be afforded even in healthy economies. Westbrook and Butler (1981, p. 66) advocate the need for coordination and take the position that "if all parties actively collaborate, . . . their total productivity will be greater than the sum of their separate productivities, had they worked separately or in opposition." Reubens (1977, p. 80) reports on employers seeking "better coordination between the enterprise and the part-time school." Fondse (1977, pp. 90-97) discusses the unproductive outcome of "dead-end effect" and "divided responsibility" and talks of the need for "better harmonization and integration between formal education and the apprenticeship system." Saskatchewan Department of Apprenticeship (1989, pp. 16, 49) identifies better tripartite cooperation among government, industry and labour (workers and unions) as a key towards improving Saskatchewan's apprenticeship system.

Often in Third World countries scarce resources are wasted through duplication of efforts in different sectors

of the economy, sometimes creating conflicts between agencies involved in vocational training and technical education. Grabe (1981, p. 147) argues that donor agencies often worsen the situation by duplicating resources and calls for coordination and rationalization of efforts towards meeting the "urgent need of producing skilled manpower" for the country. Similar concerns for the need for coordination have been expressed on studies in Ghana (Ramsay, 1983; World Bank, 1989) and were expressed by respondents as being important for improving Ghana's apprenticeship system.

The Need for Commitment to the Apprenticeship System

Commitment on the part of government, industry, labour and the general public was identified as an important element towards an effective apprenticeship system (Charrette, et al., 1987; Whitehouse, 1987; Fuller, 1978; Panorama DDR, 1987). Although funds and facilities may be provided, unless there is commitment to apprenticeship, the program may not be effective. Weiermair (1984) argues that, in spite of availability of resources for vocational and apprenticeship training in Canada under the TVTA and AOTA Acts in the 1960's and 1970's, the reward system did not favour apprenticeship training; and "over 80% of all training during the period consisted of academic upgrading and skill training of sorts" (p. 26). According to

Weiermair, many studies have repeatedly shown that despite heavy investment in training programs, neither unemployment nor productivity performance had improved (Axworthy, 1982). This shortcoming, coupled with the problem of immigrant trade skills shortages by the late 1970's, resulted in "industrial training in general and apprenticeship training in particular . . . for the first time in Canada's history, being seriously accepted as alternative strategies of manpower development. Apprenticeship training became accepted as equally important to industrial excellence and productivity as formal schooling and education" (Weiermair, 1984, p. 26).

The need for commitment to ensure the success of apprenticeship training is further indicated by Ruebens (1979, p. 78) who points out that "co-operation . . . to establish group training centres demands a high degree of commitment to training and its organization." Norton and Butler (1981, p. 32) attribute the success of the German apprenticeship system to tripartite commitment; and Worthington (1984, p. 6) advocates collaborative partnership among various apprenticeship organs in the United States based on "trust and commitment to the development of a skilled workforce". Saskatchewan Department of Apprenticeship (1989) calls for commitment on the part of government, industry, employers and apprentices for effectiveness of its apprenticeship system. Kiesewalter

(1978, p. 17) captures the need for commitment on the part of all players to the success of the Canadian apprenticeship system in the following observation, "mere intentions will not by themselves produce the best results." The ILO (1981a) study of Asian apprenticeship emphasized that there must be a definite effort and commitment to the cause of apprenticeship. Tripartite commitment on the part of government, employers, industry and labour is necessary if any apprenticeship program is to improve for the future.

The importance of the major findings, namely, the need for manpower training policy, funding policy and mechanism, coordination of resources and commitment to the improvement and effectiveness of Ghana's apprenticeship training as identified during the study have been supported by results from other studies. Unless conscious and definite efforts are made to address these issues by Ghana (as other countries have done), any other efforts at improving the apprenticeship system will be futile.

Findings from the Four Main Areas

The study was organized around four main areas. The following were additional findings for each of the four areas.

Organization of Apprenticeship Training

For the in-school, technical/vocational institutional training aspect, the study found: a critical lack of training resources; a serious problem of inexperienced instructional staff doing instructional training; a lack of relevance of training to local and industrial needs, without input from industry, and the content being too theoretical; and the quality and attitudes of students towards apprenticeship being questionable.

Studies of the in-school aspect of apprenticeship training in other countries identified similar issues and presented suggestions which addressed these issues (Baker, 1981; Charrette et al., 1987; Dalton, Bernard, & Coffin, 1980; Glover, 1986; ILO, 1981a; Kilburn, 1980; NCRVE, 1983; Oriel, 1984; Ramsey & Chapman, 1981; Saskatchewan Department of Apprenticeship, 1989; Thomas, 1982; Westbrook & Butler, 1981; Worthington, 1984). The following is a synopsis of these suggestions:

* Content of institutional training must be relevant to the needs of industry through inputs from active and dynamic membership trades advisory committees so that the curriculum and instructors may reflect the relevant complementary theoretical and practical training required.
* Trades Advisory Boards must have qualified membership and must be held for accountable for ensuring the

currency of the curriculum.

* For training programs to be kept up-to-date and relevant, updating of equipment is very necessary; this could be done by establishing and maintaining communication links with industry (Havlick, 1977). Through linkages, industry may allow institutions the use of special and expensive equipment to cut down costs.
* Special training equipment could be leased rather than purchased.
* The modularized approach and competency based training are examples of delivery methods for improved apprenticeship training. The modular approach enables apprentices to be certified stage by stage (ILO, 1981a, p. 73).
* Instructional staff training is fundamental to training effectiveness (Norton & Butler, 1981). All instructors must be scheduled to spend time in industry either working or observing new developments in their respective trade areas. Regular annual return to industry should be compulsory.
* Whenever feasible, institutions must invite guest lecturers from industry to teach specialized portions of in-school apprenticeship training.
* Student selection mechanism is important to ensure good employee selection and "efficient" transfer of basic

trained persons into apprenticeship with the potential for continued training and development (ILO, 1981a, p. 70; Thomas, 1982, p. 27).

The foregoing relate to the concerns expressed by respondents for improving the quality of Ghana's institutional aspect of apprenticeship training.

The study found Ghana's on-the-job apprenticeship training to lack organization, structure, content and coordination. There were virtually no trained on-the-job trainers nor supervision of on-the-job training, except in those organizations doing their own training. Inspection of the on-the-job component was virtually not existent. According to UNDP/ILO (1978, p. 15), Ghana's average on-the-job apprentice inspection was 0.28, "a figure regarded as being much too low."

The traditional dual-system of training apprentices still continues in most countries (Grabe, 1981); and the importance of on-the-job training to the success of the dual system is well recognised (Kiesewalter, 1978; Miller, 1988; Norton & Butler, 1981; Whitworth, 1982). In discussing on-the-job training in Canada, Weiermair (1984, pp. 63-69) identified factors affecting the quality of on-the-job training to include: lack of training plans; lack of supervision of apprentices; lack of pedagogical skills among journeymen; and/or lack of appropriate machinery and equipment to expose apprentices.

Weiermair (1984) also reviewed the approaches used to involve employers in the on-the-job aspect of apprenticeship training. He noted that in Canada, these may range from province to province and range from active requirement to moral appeal. Kiesewalter (1978) contended that it should be obligatory for employers to conduct on-the-job training. He argued that on-the-job training would have suffered "even in Germany, if industry had been left completely to its own devices" (p. 31).

Other elements identified for improving on-the-job training are provided by Charrette et al. (1987, p. 36) and the Saskatchewan Department of Apprenticeship (1989, pp. 26-27), and are as follows:

* More extensive monitoring of on-the-job training
* More assistance to employers in developing training plans
* Information and resource material to assist journeymen in teaching apprentices
* The continued development and use of record books for documenting the on-the-job training of apprentices to identify quality of performance and training.
* Apprentices be made aware of their future obligations as instructors of future apprentices and therefore be provided with basic teaching skills in their in-school final years.
* Increasing industry's involvement in training; industry

must take more responsibility for training.

* Mandatory apprenticeship should be put in place.

This study found that, although apprenticeship legislation exists in Ghana, its provisions were not being implemented. Bonding of apprentices was questionable. The survey of literature indicated the provision of legislation was the legal framework for most apprenticeship systems. Implementation of apprenticeship legislation within a system depends upon whether apprenticeship is voluntary or compulsory (ILO, 1981a, p. 39) and the manpower policies that the particular country may have in place (Reubens, 1979). In view of renewed interest in apprenticeship training, apprenticeship legislation has undergone and is still undergoing various forms of revisions in many countries in recent years to reflect the needs of respective countries. These changes, according to Grabe (1981, p. 135), range from "rewording to organization of training, responsibilities of parties involved, control and supervision of the training process, and financial provisions," among others. The call by respondents for a review of Ghana's apprenticeship legislation to reflect current needs appears to be supported in literature.

Bonding of apprentices was almost no longer existent in most of the countries reviewed. ILO (1981a) reports that of the 19 countries surveyed in the Asia Pacific Region, only three (16%) of them had official bonding legislation

including Singapore where "the trend is to reduce or omit this provision" (p. 170). Most respondents were in favour of bonding in Ghana only as a temporary measure of commitment.

The study also found that Ghana's apprenticeship testing and certification needed improvement. Testing and certification of an apprentice in the participation and completion of apprenticeship training is very important as it represents individual accomplishment and is a potential for social, educational and economic advancement (Reubens, 1979, pp. 46-49). The issue is even more critical in developing countries where certification is very important for wage employment and career mobility. Glover (1986, p. 19) identifies two roles for trade examinations as a means of controlling training effectiveness and providing apprentices a means of obtaining a nationally recognized qualification. Thus the significance of testing and certification is reflected in their ability to facilitate monitoring and recognition of training quality.

Glover (1986) and Charrette et al.(1987) identify the following elements for improving testing and acceptance of certification.

* Supervision, monitoring and progressive assessment of on-the-job training through the use of apprentice record or logbook.
* Delivery of training to be more closely linked with

industry so as to make it more practical and competency oriented.

* Greater involvement of trade advisory boards in curriculum and testing and the reassessment of the role and composition of trade advisory boards to make them dynamic and effective
* Ensuring relevance of in-school training content to industrial requirements.
* Movement towards modularized, competency based training, using alternative delivery modes like block release system, day release, extended days, among others.

According to ILO (1981a, p. 50) the trend is one of "increasing modular certification and practical training of an apprentice, allowing for consolidation and flexibility of further development." The foregoing elements relate to initiatives suggested by respondents in Ghana. However, in view of cost limitations, it is doubtful if modularization on an individual basis can be applied in Ghana in the foreseeable future.

Funding of Apprenticeship Training

As reported at the beginning of this chapter, the study found the need for funding Ghana's apprenticeship training as one of the four fundamental issues to be addressed.

Traditionally employers and apprentices have borne most

of the cost of the on-the-job portion of apprenticeship training (Charette et al., 1987; Reubens, 1979) while the cost of the in-school portion has been borne by government. However, the trend has been to transfer the cost from the employer/apprentice combination to public budgets as apprenticeship training became more institutionalized (Grabe, 1981).

Public authorities cannot bear the cost alone and most developed and developing countries surveyed have instituted funding policies for the levy-grant training or tax schemes to support apprenticeship training. While the levy-grant system ensures employers' responsibility for apprenticeship training it also involves all employers so that those who do not train may contribute to support those who train. Levy-grants range between 0.5% to 3% of payrolls (Glover, 1986; Grabe, 1981). According to Grabe (1986, pp. 148-149) the levy, as a central funding, ensures a sustained source of funding apart from government resources which may not be guaranteed; it has also brought some degree of stability to respective vocational training systems and possibilities for long-term development and planning. Grabe cautions against using levy funds for administrative and personnel remuneration rather than for actual vocational training and instructional staff development (p. 149). Strategies for improving financing of apprenticeship training, besides grant-levy schemes, tax incentives and others already

identified, include the following:

* Lobbying Governments to maintain adequate levels of funding
* Governments to make bursaries and student loans available to apprentice trainees
* Exploring alternative modes of delivery that could be more cost-effective (Charrette et al., 1987; Saskatchewan Department of Apprenticeship, 1989).
* Adopting income-generating production as part of the operation of vocational centres which has the added benefit of creating work experience and reducing training costs (Lloyd, 1977). ILO (1985, p. 62) talks of China's innovation where operational costs of training centres are met from a respective adjoining factory or a farm established as part of, yet distinct, from the training facilities. Another example is in the USSR where revenue from students' production is another source of financing.
* Governments exploring ways of reducing costs by
  - Examining ways of encouraging skill development in less time.
  - Increasing training coordination between government agencies to reduce duplication
  - Increasing investments in instructor training and self-instructional packages (ILO, 1985).

The foregoing are additional examples of strategies by

which apprenticeship is being financed in various developed and developing countries. If Ghana's apprenticeship is to be improved in the 1990's, then appropriate measures may have to be taken towards a funding system more appropriate for Ghana's needs and priorities. According to ILO (1985, p. 64) "The current problems of how to finance the growing demands placed upon the vocational training system will remain."

Labour Market Requirements

The study found that Ghana's apprenticeship training was not related to the labour market requirements as there was no manpower training policy, neither was there any training coordination for rational utilization of resources.

Apprenticeship training is, by its nature, employer driven and responds to the needs of industry and the state of the economy (Weiermair, 1984). When the economy is expanding the employment rate will be high and employers will employ more apprentices (Warrack, 1982) and the reverse happens as the economy deteriorates. Charrette et al. (1987, p. 41) add that apprenticeship training "helps prevent skills shortages from occurring and provides the skilled labour needs of the economy on an ongoing basis." Thus the presence of a skilled labour force on a continuing basis is important for a nation's economy. Britain's Manpower Services Commission was set up, according to Fuller

(1977, p. 37), "to ensure that school leavers' access to apprenticeship was not suddenly reduced in recession years . . .as 'the natural workings of the labour market do not correct serious skill imbalances'" (p. 43). In other words, for certain levels of skilled manpower to be created, there must be definitive policies to bring about such levels. Reubens (1979, p. 49), on the other hand, says that unlike Britain where the apprenticeship system relates more directly to specific employment, Germany does not relate its apprenticeship to the labour market. Perhaps the two systems may be extremes and, although it is generally agreed that relating manpower planning techniques to the changing employment demands of a modern economy is a dilemma in many countries, there is still a need for up-to-date statistics and information on all aspects of current demographic and economic trends (ILO, 1985). There is the need for the establishment of manpower information systems to help a country determine its manpower and training needs. Without access to reliable statistics and information, it is impossible to predict even short-term training requirements. According to ILO (1985, p. 60), "The lack of manpower data has left many countries adrift in the preparation of medium term training plans."

To help relate apprenticeship training to labour market demands, a World Bank South Asia Conference on Skilled Manpower Development (ILO, 1985) suggested that:

* Because of difficulties in preparing flexible manpower policies, training managers of training institutions undertake reliable assessments of immediate training needs from which short-term and medium-term operational policies can be derived. ILO's labour market signalling technique which can serve as a tool for training needs assessment is recommended (p. 60).

Other labour market improvement techniques suggested by Charrette et al. (1987) and Saskatchewan Apprenticeship Department (1989) include the following:

* Set up a manpower information system
* There must be a coordinated approach in the provision of training.
* Efforts must be made in improving labour market forecasting.

In view of Ghana's very limited resources, and in view of the absence of labour market surveys, Ghana would do well to learn from the experiences of other countries before embarking on a labour market demand system.

Promotion of Apprenticeship Training

The study found that conscious actions need to be taken to make apprenticeship training more acceptable to employers, the youth and the general public.

A major problem of apprenticeship training as part of technical/vocational education is the superiority accorded

academic education (Dankwah, 1983; Norton & Butler, 1981; Parrott, 1977; Purvis, 1982; Weiermair, 1984). As ILO (1985, p. 53) puts it, "in many countries and cultures, the social status afforded academic education is such that it promotes the concept of the superiority of white collar jobs over blue collar jobs. One effect of this social illusion is often to create a pool of educated unemployed." It is believed that more integrated school curriculum development related to the world of work will bring the fields of education and training closer together and help alleviate this problem.

For apprenticeship training to be accepted, it must be accorded respect. In discussing the German apprenticeship system, Reubens (1977, p. 52) contends that "factors influencing the German position are the high status accorded anyone passing apprenticeship examinations." At a conference of Asian Pacific countries on apprenticeship training, there was consensus on the need for national promotional campaign policy to overcome the stigma attached to apprenticeship (ILO, 1981b).

The following recommendations for improving the status of apprenticeship training are drawn from the following sources, Charrette et al., 1987; Grabe, 1981; Havlik, 1977; ILO, 1975; ILO, 1981a; ILO, 1981b; Kiesewalter, 1978; Norton and Butler, 1981; and Saskatchewan Department of Apprenticeship, 1989.

Promotion to Employers and Small Scale Entrepreneurs. To make the concept of apprenticeship training acceptable to industry:

* Employers need to be educated to adopt a positive attitude towards training and to see their responsibility and role in apprenticeship training, including the benefits of skilled manpower for industry and productivity.
* There must be provision of financial and other forms of incentives to make apprenticeship training attractive to employers. As an example, the levy and grant system achieves a wider participation in sharing social costs of training and provides an "enforced" incentive to training by employers.
* Institutional training must be perceived by employers as effective and relevant to the needs of industry.
* There must be linkage mechanisms for greater input from industry into institutional training curricula and activities through trade advisory committees and staff exchanges.

Promotion to Youth In and Out of School. Strategies to attract youth into apprenticeship include the following:

* There must be an extensive vocational guidance

program in the school system for students, teachers and parents. This should include input from industry and technical/vocational schools using videos, pamphlets, speakers, occupational information, etc., as contained in the provisions of ILO Convention No. 142 and Recommendations No. 150 on Vocational Guidance and Vocational Training (ILO, 1975).

* The fields of education and training must be brought closer together; and certification structure and programs must facilitate horizontal and vertical mobility. There must be upgrading opportunities for career development through lifelong continuing education (Norton & Butler, 1981). Post graduate master craftsman training oppostunities such as the Swiss model for managerial training (Grabe, 1981) or as it happens in the United States towards further education (Rice, 1982; Whitehouse, 1977) or in Japan's and Korea's lifelong training models (ILO, 1981a), are possibilities that could be considered to overcome the dead-end effect of apprenticeship (Fondse, 1977).

* The wage structure as a reward system must be improved to favour the apprenticeship route (Kiesewalter, 1978).

* Vocational and apprenticeship trainees must be given roles and opportunities in social and community life equal to students in regular schools including the offering of scholarships, bursaries and awards as enjoyed by their peers in regular schools.
* National apprenticeship skills competitions need to be organized.
* Outstanding vocational and apprenticeship graduates must be recognized through awarding of prizes, publication of results, graduation ceremonies and other forms of official recognition.

Promotion to The Public. The public is used here to include Government decision makers, politicians, workers associations, etc. Promotion for apprenticeship by this category could include:

* The use of public relational initiatives including the use of results of studies on apprenticeship training for better decision making;
* Development of illustrated booklets on employment and occupational information designed for young school leavers and their parents.
* Apprenticeship and vocational training authorities need to make more use of the mass media and speeches by community leaders and political

leaders to promote apprenticeship and its acceptance.

Technological Change and Evaluation

In addition to the four main areas investigated, two other areas, namely, impact of technological change and evaluation were also investigated. Problems relating to the impact of technological change and evaluation of Ghana's apprenticeship system were not considered as major concerns for investigation in this study; these problems were considered to be more significant to well established systems and countries with developed economies.

The investigation revealed that the impact of technological change on Ghana's technical/vocational training and apprenticeship system has not been very significant. The lack of resources to renew training facilities has resulted in minimal impact of new technology on the training system in Ghana. As was concluded at the 1983 Fifth Meeting of ILO's Asian and Pacific Skill Development Programme Technical Committee meeting in Seoul, the impact of technological change is brought about by many factors including "the absorption capacity of the society and the institutional controls such as government control of either the export or import of technological innovations" (ILO, 1985, p. 8). Thus, to a large degree, the extent of technological impact depends upon government import and

export policies.

The study found rather little, if any, substantive evaluation of Ghana's apprenticeship system. However, the importance of evaluation in education and training is well recognized. Glover's (1986) concern for quality apprenticeship training derives from his orientation that quality cannot be sacrificed for quantity in apprenticeship training. ILO (1981, p. 32) reports that continuing evaluation of training programs is necessary for the improvement of skill training. An evaluation mechanism to monitor Ghana's apprenticeship system will therefore be necessary for improved effectiveness.

Conclusions

From the findings of the study, the following conclusions are drawn. Ghana's apprenticeship system has not been given the attention and support it needs and is therefore in much requirement for renewal in the 1990's.

Research has shown that a major constraint to economic development is a scarcity of skilled labour. Apprenticeship as a vehicle for skilled manpower development is well recognized in both developed and developing countries. Studies in the United States, Canada, Britain, France, Germany and other European countries, as well as some in countries in the Asia Pacific Region including Australia, Japan, India, Pakistan, Sri Lanka and Nepal, to mention only

a few, have identified significant efforts being made by various countries to improve apprenticeship systems for increased productivity and socioeconomic development. No apprenticeship system in any one country was found to be perfect or problem-free. There was evidence of many efforts by various countries towards improving their respective systems. Most of the issues and concerns expressed by Ghanaian respondents were found to be similar to those reported in studies from other countries.

Major Findings

For an effective and successful apprenticeship system to be in place within a country's training system there was the need for:

* A definite apprenticeship training policy within the context of a country's overall manpower development policy. Without such a policy, apprenticeship is sometimes treated as being inferior, not receiving the attention it deserves.
* Funding mechanism to ensure a constant level of support and continuity in training in times of economic and production fluctuations.
* Coordination between education and on-the-job training in industry to ensure effective communication and relevance of program content. The second area for coordination concerns the effective and economic use of

resources to avoid wasteful duplication.

* Commitment to improvement of apprenticeship training on the part of all concerned. Tripartite commitment on the part of Government representatives, industry (employers) and labour (employees and unions) was found to be fundamental to the development and success of the apprenticeship system.

In view of the importance stressed by respondents and from the outcomes of studies of other apprenticeship systems reviewed, the need to address the above major issues as a priority by Ghana cannot be over emphasized. Without these conditions firmly in place in Ghana, any other initiatives towards renewing or improving the apprenticeship system will only be fruitless.

Other Significant Findings

Besides the foregoing observations, other findings in the areas of organization, funding, labour market requirements and promotion were identified.

Organization of Training

* For effective in-school training, the following needs must be addressed:
  - Staff training.
  - Rehabilitation of facilities and increased provision of training resources.
  - Increased content relevance.

- Inputs into training by Trades Advisory Committees in areas such as curriculum renewal.
- Increased institutional links with industry.
- The selection of the right calibre of student in terms of motivation, attitude and capacity for immediate training and the potential for future upgrading would help improve the success of apprenticeship.

* On-the-job training could be improved by:
  - Increased supervision and monitoring of on-the-job training.
  - Provision of assistance to employers in developing on-the-job training plans.
  - Training of trainers (journeymen) to instruct apprentices on the job.
  - Increasing involvement of industry in training.
* Improvement in legislation and bonding:
  - The issue of legislation and its implementation was found in the literature to be rather specific to individual countries and could not be supported except by its regulatory framework to prevent exploitation of trainees and to identify roles and responsibilities of various players.

- The practice of bonding seemed to be almost non-existent in most countries. However, it is doubtful if it could be ignored altogether in emerging or developing apprenticeship systems like that of Ghana.

* Testing and certification improvement:
  - Testing and certification was found to be a very important aspect of apprenticeship training and needed to be accorded greater attention and input from industry to be respected and accepted.

Funding. The issue of funding has been already mentioned as a major finding. Its importance is reflected in the alternative strategies that are being adopted to fund apprenticeship in other countries. The general finding was that Government could not fund apprenticeship training all alone; and there must be a shared responsibility between the employer, the trainee and the Government.

Labour Market Requirements. It was found that relating apprenticeship training to labour market requirement was generally difficult as it depends on the inclination of employers (especially in a voluntary system) and on the needs of industry and the state of a country's economy. However, it would be useful, especially where funding resources were very limited,

to relate the apprenticeship training to some basic needs assessment for cost-effectiveness and efficiency.

Promotion of Apprenticeship Training. The investigation revealed that, especially in Third World countries, conscious promotional efforts must be initiated and targeted to appropriate audiences to improve the low image generally accorded apprenticeship training. Employers need to be educated in their responsibility and the value of apprenticeship to industry; youth need to be counselled to see a future in apprenticeship and the general public need to be made aware of the true value of apprenticeship.

In addition to the foregoing, it was found out that technological change has impact upon apprenticeship training. The extent of such impact depends upon the state of the country's economy and its capacity to relate to and utilize the technology. In much the same vein, evaluation was found to have a very important role to play in determining the effectiveness of apprenticeship programs. These findings on technological change and evaluation came from people's experiences in studies of other apprenticeship systems. The views did not come from the investigations in Ghana. This was to be expected as respondents' concerns were more for the four major areas for improvement and effectiveness.

Recommendations

The following recommendations are being made as a result of this study. They are presented as workable adaptations of current practices in Ghana as well as adaptations of practices found elsewhere which are viewed as appropriate to Ghana's current situation for improving her apprenticeship system towards economic recovery in the 1990's.

Major Recommendations

1. The issue of the lack of a national training policy in Ghana is a problem that needs to be urgently addressed. It is recommended that a national manpower training policy be formulated followed by the development of a national policy for technical/vocational education which will give Ghana's apprenticeship focus, direction and a national character.
2. There is the need for coordination of training efforts in technical and vocational training including apprenticeship and alternate forms of training, both in the public and private sectors to reduce wasteful duplication of efforts. As an example, the National Vocational Training Institute undertakes similar activities as the Ghana Education Service and runs 17 vocational institutions or centres which offer similar courses as being offered in 20 technical institutes

also under the GES. (See Appendices D and F) There are other similar training establishments in the public sector. In addition, donor agencies tend to duplicate efforts by assisting individual institutions on similar programs thereby thinly spreading limited resources. Ghana cannot afford such luxury especially in her present economic situation. It is recommended that a rationalization process be initiated to bring all the technical/vocational training activities of the GES, NVTI and other governmental and non-governmental agencies under a national technical and vocational education and training board to coordinate and rationalize technical/vocational training in Ghana. The board would have tripartite representation from the Government, Industry and Labour. Representatives from Government would come from the Ministries of Education (GES), Mobilization and Social Welfare (NVTI) and Science and Industry. Industry would be represented by the Ghana Manufacturers' Association and Ghana Employers Association. Labour would be represented by workers, unions and trades and professional associations. For the board to be effective, it is recommended that it be given ministerial status.

3. Funding is critical to Ghana's apprenticeship system. In recognition of Ghana's present economic constraints, the penalties for not providing training should be

severe in the future. It is recommended that Ghana establish an appropriate apprenticeship training fund with contributions from employers and Government. The fund could be based on the levy-grant modality with tax rebate and other incentives to encourage employer participation in training. Unions, trades and professional associations should also contribute to the fund. Alternately a training tax might be levied to create the fund. The proposed national technical and vocational training board would control the fund. In addition to the fund it is recommended that individual institutions supplement their funding with the following:

- Students' fees as a token to show commitment; this could be refundable after training or used in purchasing tool kits to be given to trainees upon graduation.
- Income generating activities through the production unit concept. In this context, the Chinese model of financing individual institutions from the proceeds of a related factory or farm project might be worth considering.
- To facilitate individual institutional planning and accountability, instead of the present group funding, each technical/vocational institution be independently and block funded according to its

programs. The head of the institution would be accountable to the institution's board and the funding agency.

To conserve funds for the rehabilitation and consolidation of existing facilities, it is recommended that a moratorium be placed on the construction of additional institutions. In this context, institutions may operate on the shift system to increase their respective utilization. In view of Ghana's economic difficulties, it is recommended that continued but discriminatory, relevant and coordinated assistance be sought from international donor countries and agencies to help build up technical/vocational education and help improve apprenticeship training.

4. In order for Ghana's apprenticeship to improve and succeed, there will be the need for a change in attitudes and a demonstration of tripartite commitment to apprenticeship on the part of the Government, industry and labour. It is therefore recommended that in all aspects of the apprenticeship program, individuals with demonstrated interest and commitment to apprenticeship training be placed in charge.

Other Recommendations

5(a) In the organization of apprenticeship training, efforts must be made towards improving the quality of the in-

school aspect of apprenticeship training. It is recommended that:

* The quality of instructional staff be improved by:
  - In-service training in pedagogy, andragogy and occupational practical skills upgrading.
  - Institution of a policy of industrial attachment for every trade instructor on a periodic basis not exceeding once every 3 years.
  - Development of a mechanism for staff exchange with industry.
  - The use of guest lecturers from the field.
  - Improving the salaries and conditions of service to retain existing staff and to attract and retain more experienced staff.
* A scheme should be developed to schedule replacement of equipment and other training resources on a progressive basis. Provision for consumable materials needs to be given attention on an ongoing basis.
* Curriculum renewal be undertaken at least once every 5 years with input from industry to ensure relevance and competence of students. NVTI to cooperate with the GES in this venture.
* Improve institutional links with industry and a greater input from trades advisory committees into programs.

5(b) On-the-job training be improved by effective supervision on the job. It is recommended that:

* Employers be assisted with planning their respective on-the-job training.
* Qualified and experienced inspectors, who should also be active trade instructors, be employed to undertake regular and systematic on-the-job inspection of apprentices using training log books and relevant records. Additional inspectors need to be trained and provided with transportation to enable them to carry out their inspection schedules.
* Journeymen or artisans need to be given basic instructional, skills to enable them to train apprentices on-the-job.
* In order to encourage future widespread training on-the-job, basic pedagogical information be included in the curriculum of final year apprentices.
* Where on-the-job training facilities are not available, the production unit or custom job concept including projects and contracts for remuneration as being currently implemented at the Accra Technical Training Centre and the Kumasi Technical Institute may be employed to offer alternate on-the-job training to students at the

institutional level.

5(c) Testing and certification was another important area which the study revealed as needing attention. For the NVTI apprenticeship certificate to gain acceptance and credibility with employers, it is recommended that:

* The curriculum be made relevant to the needs of industry through inputs from Trades Advisory Committees.
* Tests to be competency-based and administered by a tripartite committee.
* Progressive (formative) assessment of apprentices' work be adopted as part of final assessment.
* GES to share its facilities with the NVTI and help train testing officers for the NVTI.

6. Labour Market Requirements

Apprenticeship is industry and economy driven and in Ghana's present economic situation, the logical question is whether Ghana can afford apprenticeship training on any significant scale in relation to labour market requirements. It is significant to note that in view of the large numbers of Junior Secondary School (JSS) students who cannot be absorbed into Senior Secondary Schools (SSS), including those SSS students who may choose entry into apprenticeship training, there is the need to provide skilled training in appropriate members. (See Appendix C). In the

researcher's view, it will be better to have a stock of skilled youth whose skills can be transferred and applied elsewhere than to have unemployable unskilled youth with its attendant social urban problems. Another reason to provide training is that Ghana's economic future depends upon small scale industry and the traditional sector economy; and, as in Germany, the trained youth can go into small scale manufacturing or entrepreneurship both in the urban and rural sectors. As another concept, Ghana could export skills if a portion of its trained youth go to work in other countries as skilled craftsmen and repartriate part of their hard currency income to Ghana as happens in many Asian countries. Ghana could become a vocational training country within the West Africa sub-region. In view of the foregoing, it is recommended that:

* Ghana adopts a compulsory formal apprenticeship system to facilitate the training of appropriate numbers among those students who would be terminating at the JSS level.
* In the proposed compulsory apprenticeship context, entrepreneurial training should be part of the institutional training in preparation for the apprentice to enter into self-employment.
* Bonding may be applied only initially for commitment of the employer and the trainee but

should be reviewed for eventual elimination.

* The apprenticeship regulations should be reviewed to reflect the new direction.
* All technical institutions under the GES offer apprenticeship courses and pre-employment courses for entry into apprenticeship programs. Other models like cooperative education and internship programs may also be considered.
* A scheme needs to be worked out so that the shift system of training be adopted to accommodate a good percentage of the JSS and SSS students, thereby maximizing the utilization of facilities.
* Labour market needs assessment mechanisms be employed to determine areas for training. Manpower Information Systems will need to be established by GES and NVTI.

In order that the formal sector provide support to the traditional informal sector and to expand the base for apprenticeship training, master craftsmen in self-employed small businesses should be offered some training and be granted loans to support their businesses on condition that they take on and train apprentices on-the-job as well.

7. Promotion of Apprenticeship

To eradicate the unfortunate stigma attached to vocational education and apprenticeship training, it is

recommended that deliberate promotional activities be undertaken to enhance the following:

* To encourage employers to be interested in and appreciate their obligation towards apprenticeship training.
* Youth be made aware of the economic opportunities inherent in apprenticeship training through career guidance and counselling.
* Wage structures be reorganized to support apprenticeship training.
* Students on apprenticeship programs be equally eligible for scholarships, bursaries, student loans, etc., as their peers in the regular school system.
* The general public be educated about the potential and real benefits of apprenticeship training to Ghana's socioeconomic growth.

It is further recommended that the research and development department of the NVTI be coordinated with the Examinations Unit of the GES and be strengthened to conduct research into technical and vocational education and training in Ghana.

Recommendations for Further Research

1. In view of the new wave of emphasis being placed on practical education in Ghana and because of the need to

promote apprenticeship in Ghana, it is recommended that a study be conducted to find the attitudes of employers, parents and teachers towards vocational or apprenticeship training. The outcome could help develop strategies for promoting apprenticeship training in Ghana.

2. It is recommended that an evaluative study be conducted to find out the impact of apprenticeship training in some of the modern sector major occupations on Ghana's economy.
3. Because there were divided opinions amongst respondents on the issue of bonding in Ghana's apprenticeship system during this study, it is recommended that a study be conducted to find out selected audiences' perceptions of bonding and to determine a clearer understanding of its effects on Ghana's apprenticeship system.
4. Since funding is one of the central issues in Ghana's apprenticeship system, it is recommended that a study be conducted to find out which of the alternative funding strategies would best serve the needs of Ghana's apprenticeship system.
5. The length of apprenticeship training is an issue of debate in the literature primarily focussing on cost reduction. It is recommended that a study be conducted to identify to what extent the length of Ghana's

apprenticeship training may be reduced from the present 4 year period without sacrificing quality.

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APPENDIX A

Correspondence

University of Regina

Faculty of Education

Regina, Saskatchewan
Canada S4S 0A2

(306) 585-4519

~~131~~

May, 1989

_____

_____

_____

_____

Dear _____:

As discussed with your good self, the attached is a draft questionnaire I intend to administer to selected individuals in Ghana regarding my research project.

The purpose is to get the respondents in Ghana to indicate what they perceive as the issues and problems they see as being necessary to be addressed towards improving Ghana's apprenticeship system in the 1990's.

I would then use the results to investigate primarily how other countries have dealt with or are dealing with such issues in their respective apprenticeship systems; and through the review of literature, I shall make recommendations for Ghana's consideration.

I should be grateful if you would kindly look over the draft questionnaire for any comments and suggestions you might consider appropriate.

I would appreciate your response by _____ May, 1989.

Thank you for your kind cooperation.

Yours sincerely,

John Budu-Smith

JBS:pmf

Attach.

University of Regina

Faculty of Education

Regina, Saskatchewan
Canada S4S 0A2

(306) 585-4519

June, 1989

_____

_____

_____

_____

Dear _____:

Re: Pilot Interview

Further to my discussions with you last week regarding my research project, this is to confirm that I shall be meeting with you on _____ to pilot-test the interview questionnaire I have developed for my survey in Ghana.

The interview is expected to take no longer than 60 minutes; and I want to indicate in advance, my deep appreciation for your cooperation in helping me test the questions before administering them in Ghana.

Yours sincerely,

John Budu-Smith

JBS:pmf

University of Regina

Faculty of Education

Regina, Saskatchewan
Canada S4S 0A2

(306) 585-4519

June, 1989

_____

_____

_____

_____

Dear _____:

I am presently conducting a research study in fulfillment of the requrements for the degree of Master of Vocational/Technical Education, University of Regina, Saskatchewan, Canada, under the supervision of Dr. Geoffrey Sainty. The project is titled "Ghana's Apprenticehsip System: Prospects for Renewal into the 1990's". The project will investigate the issues and problems perceived by Ghanaian authorities and employers as being relevant in ensuring that Ghana's Apprenticeship System will meet Ghana's skilled manpower needs in the 1990's. The results of this investigation will be used to identify what other countries have done or are doing about similar issues and problems in their respective Apprenticeship Systems.

The success of this research project is dependent upon your kind cooperation in helping to identify the key issues and needs for improving Ghana's Apprenticeship System. To obtain this information, I would like to meet with you for an hour sometime during the next four weeks while I am home in Ghana. I will be contacting you soon to arrange for an appointment. All responses from individuals will remain confidential and publication of the data will be in the aggregate only and will not disclose the identity of the individuals interviewed.

I look forward to meeting with you soon.

Yours sincerely,

John Budu-Smith

JBS:pmf

Ghana Address & Telephone
c/o Accra Technical Training Centre
Box M177, Accra, Ghana
Phone: 228344 or Res. 777392

APPENDIX B

Questionnaire

INTERVIEW FORMAT ON GHANA'S APPRENTICESHIP SYSTEM

Introduction:

(i) Give thanks for agreeing to participation. Appreciate time given. Stress time limit 60 minutes.

(ii) Mention Graduate Statement status

(iii) Tell Title of Study - Prospects for renewal
- How you propose conduct study.
i.e. To look at where we are now and see what is being done in Saskatchewan and elsewhere as prospects for Ghana's renewal for the 1990's.

In this interview you will be requested or asked to highlight what you see as the major issues or what needs are to be served in an effort to improve Ghana's Apprenticeship Programs for the next decade.

SECTION A: ORGANIZATION

This section deals with how Ghana's Apprenticeship Program is organized and operated as a training process.

1. What would you identify as the most important factors necessary for improving the quality of the institutional (in-school) component of the apprenticeship training?

2. How much curriculum development (renewal) in your observation needs to take place in Ghana's Apprenticeship Program?

3. How effective is on-the-job apprenticeship training in Ghana? How can it be improved?

4. How can we improve the on-the-job (industrial) inspection of the apprenticeship system?

5. What in your estimation needs to be done to improve the enforcement of the Apprenticeship Regulations? Should we continue with bonding of apprentices into the 1990's?

6. What areas of Apprenticeship Testing and Certification do you see as needing improvement in Ghana? How can these improvements be effected?

7. What do you see as some of the major factors that can lead to improvement in the linkages between training institutions and industry?

8. How can we strengthen the effectiveness of the various Apprenticeship Committees (Trade Advisory Committees) in Ghana?

SECTION B: FINANCING APPRENTICESHIP

9. Please indicate what can be done to strengthen the funding of apprenticeship training institutions.

10. (a) What in your estimation should be the roles of the following agencies in the funding of apprenticeship training in Ghana?

(i) The Government.

(ii) Employers.

(iii) Unions.

(iv) Apprentices.

(b) Do you see us moving towards a "Training Levy" or "Training Fund" model as a means funding apprenticeship training in Ghana?

11. In your observation, should apprentices be paid while on the job? Should they be paid also while in school?

12. What in your estimation are the major issues regarding the financing of Apprenticeship in Ghana?

SECTION "C": LABOR MARKET REQUIREMENTS

In this section the interviews will try to find out how the training of apprentices is being made relevant to Ghana's Labor Market requirements.

13. To what extend is Ghana's Apprenticeship System linked with Labor Market demands in the various apprenticeship occupations.

_____

_____

_____

_____

14. How can the apprenticeship training links with labor market demands be improved?

_____

_____

_____

_____

SECTION D: TECHNOLOGICAL CHANGE

In this section, the purpose is to find out how much technological change has impacted on the Ghanaian Apprenticeship System.

15. To what extent is Ghana's Apprenticeship System adapting to technological change?

SECTION E: EVALUATION

The purpose under this section is to find out about efforts being made to review the apprentice program and to improve its effectiveness.

16. Please identify the kinds of evaluation activities that have been undertaken to improve the organization and delivery of the apprenticeship system. How can such activities be facilitated and improved?

SECTION F: PROMOTION OF THE APPRENTICESHIP PROGRAM IN GHANA

In this section, the aim is to identify strategies for improving the image of apprenticeship and to make the general public aware of the value of apprenticeship in skilled manpower development.

17. How can we (better) improve the image of apprenticeship and make it more attractive (or acceptable) to the following:

(a) Employer.

(b) Youth.

(c) Women.

(d) Public.

18. Would you like a copy of the summary of findings of this research project?

19. Thank you for your time and participation.

APPENDIX C

Projected Enrollment of Junior Secondary School (JSS) Graduates Into Senior Secondary Schools (SSS) From 1990

PROJECTED ENROLLMENT OF JUNIOR SECONDARY SCHOOL (JSS) STUDENTS INTO SENIOR SECONDARY SCHOOLS (SSS) FROM 1990

Year (September annually) (1)	JSS Final Year Enrollment (Graduates) (2)	50% of Enrollment Projected to Enter SSS (3)	Total Current First-Year Intake Capacity of Public Secondary Schools and Technical Institutes (4)	Excess of JSS Students Projected to Enter SSS. (5)	50% of JSS Graduates not Projected for Post-JSS Education (But Need to be Trained (6)
1990	196,576	98,288	32,957	65,333	98,288
1991	210,210	105,109	32,957	72,152	105,109
1992	226,596	113,301	32,957	80,344	113,301
1993	249,305	124,655	52,437	72,218	124,655
1994	277,857	138,931	52,437	86,494	138,931
1995	314,584	157,294	63,997	93,297	157,294

Source: Anfom et al., 1988.

Note from Anfom et al: The Ministry of Education and Culture hopes to place 50% of the products of JSS in the SSS, ie. about 100,000 places will be required in SSS Form One in September, 1990. The above projections indicate that the present public secondary schools and technical/vocational institutes will have places for (only) 32,957.

Note from Researcher: It may not even be feasible to absorb all of the excess JSS students projected to be absorbed into SSS (column (5)). The important issue is what to do with the population of JSS graduates in columns (6) and (5) above.

APPENDIX D

Public Technical Institutions
Under the Ghana Education Service (GES)
And List of Trade Courses Offered
Towards City & Guilds/GES Certification

*PUBLIC TECHNICAL INSTITUTIONS WITH RESPECTIVE STUDENT POPULATIONS UNDER THE GHANA EDUCATION SERVICE 1987/88

REGION	NAME OF INSTITUTION	YEAR ESTABLISHED	ENROLL-MENT
Greater Accra	1.** Accra Tech. Training Ctr	1966	400
	2. Tema Tech. Institute	1966	617
	3. Ado Tech. Institute	1982	217
Eastern	4. St. Paul's Tech. Inst.	1957	709
	5. Koforidua Tech. Inst.	1963	427
	6. Akwatia Tech. Institute	1975	306
	7. Abetifi Tech. Institute	1977	186
	8. St. Joseph's Tech. Inst.	1982	103
Volta	9. Kpandu Tech. Institute	1957	1006
	10. Anlo Tech. Institute	1975	345
	11. Have Tech. Institute	1985	267
Central	12. Asuansi Tech. Institute	1922	990
	13. Cape Coast Tech. Inst.	1953	410
Western	14. Kikam Tech. Institute	1960	359
	15.** Takoradi Tech. Institute	1978	129
Ashanti	16.** Kumasi Tech. Institute	1976	1190
Brong Ahafo	17. Sunyani Tech. Institute	1967	869
Northern	18. St. Joseph's Tech. Inst.	1985	87
Upper East	19. Bawku Tech. Institute	1968	316
	20. Bolgatanga Tech. Inst.	1985	374
		TOTAL:	9307

Source: The World Bank (1989). Republic of Ghana Basic Education for Self-Employment and Rural Development.

Notes: * This list excludes the Polytechnics and Technical Teacher Training Colleges.
** These institutions offer block release apprenticeship training in the public sector. All others offer pre-employment craft courses.

LIST OF TRADE COURSES OFFERED BY GES TECHNICAL INSTITUTIONS TOWARD CITY & GUILDS/GES CERTIFICATION

1. Auto-Body Repairs
2. Agricultural Mechanics
3. Blocklaying & Concreting
4. Catering
5. Carpentry and Joinery
6. Dressmaking
7. Diesel Mechanics
8. Electrical Construction/Installation
9. Furniture Making/Craft
10. Motor Vehicle Mechanics
11. Mechanical Engineering Craft Practice
12. Office Machines Servicing
13. Plumbing
14. Painting & Decorating
15. Radio & Television Servicing
16. Refrigeration & Air Conditioning
17. Welding & Fabrication
18. Forging & Fabrication

Source: Ghana Education Service Headquarters, Technical Education Division Records, 1989.

APPENDIX E

Approved Training Institutions and Centres Operating with the NVTI in Ghana's Apprenticeship Program

INSTITUTIONS AND LIST OF APPROVED TRAINING CENTRES FOR IN-SCHOOL TRAINING

	Centre	Under	Location
1.	Pilot Training Centre	NVTI	Accra
2.	Vocational Training & Rehabilitation Centre	NVTI	Biriwa
3.	Rural Integrated Workshop	NVTI	Winneba
4.	Titus Glover Printing School	NVTI	Kumasi
5.	Kumasi Vocational Trg. Ctr.	NVTI	Suame (Kumasi Chirapatre)
6.	Yamfo Vocational Trg. Ctr.	NVTI	Yamfo B/A
7.	Dormaa Vocational Trg. Ctr.	NVTI	Dormaa Ahenkro B/A
8.	Tamale Vocational Trg. Ctr.	NVTI	Tamale
9.	Nandom Practical Vocational Training Centre	NVTI	Nandom
10.	Accra Technical Trg. Centre	Ghana Education Ser.	Accra
11.	Kumasi Technical Institute	GES	Kumasi
12.	Africa Motors Trg. School	Africa Motors	Accra
13.	State Hotels Trg. Centre	State Hotels	Accra
14.	Tarkwa School of Mines	GES	Tarkwa
15.	Mim Timber Trades School	Mim Timber	Mim
16.	Mercedes Benz. Tech. School	GNTC	Accra
17.	Briscoe Training School	Briscoe	Accra
18.	Local Government Trg. School	Ministry of Local Govn't	Accra
19.	Kowus Motors Training School	Kowus Motors	Accra
20.	Neoplan Training School	Neoplan	Kumasi

Source: Kwami, NVTI Records, 1984.

Note: These institutions are being operated along apprenticeship programs with another set offering similar courses but under the GES and offering pre-employment (institutional only) courses.

APPENDIX F

Projections of Trainee Intake And Trade Courses Being Offered by Institutions Operated With the NVTI

PROJECTIONS OF TRAINEE INTAKE
ON TRADE COURSES BEING OFFERED BY INSTITUTIONS
OPERATED WITH THE NVTI. 1989-1991

TRADE	EXPECTED NO. OF TRAINEES			TOTAL
	1989	1990	1991	
BUILDING TRADES				
Masonry	240	240	240	720
Carpentry/Joinery	270	270	270	810
Plumbing	60	60	60	180
Rural Building	150	150	150	450
MECHANICAL TRADES				
Motor Mechanics	60	60	60	180
Vehicle Body Mechanics	60	60	60	180
Vehicle Electrician	60	60	60	180
Tractor/Const. Mechanics	30	30	30	90
Maintenance Fitting	60	60	60	180
Machining	60	60	60	180
Bench Fitting	30	30	30	90
Welding/Fabrication	90	90	90	270
Blacksmithing	60	60	60	180
ELECTRICAL TRADES				
Construction Electricals	30	30	30	90
General Electricals	30	30	30	90
Radio/T.V. Mechanics	30	30	30	90
Refrigeration Mechanics	30	30	30	90
OTHER VOCATIONAL TRADES				
Letterpress M/C Operation	30	30	30	90
Dressmaking	120	120	120	360
Cookery	120	120	120	360
Leather Works	20	20	20	60
Cane Works	40	40	40	120
TOTAL	1680	1680	1680	5040

Source: Ministry of Mobilization & Social Welfare, 1989.

APPENDIX G

Number of Trained And Untrained Teachers In The Public Technical/Vocational Institutions Under the GES

NUMBER OF TRAINED AND UNTRAINED TEACHERS
IN THE PUBLIC TECHNICAL/VOCATIONAL EDUCATION DIVISION
OF THE GHANA EDUCATION SERVICE 1986-88

YEAR	NO. OF INSTITUTES	STUDENT ENROLLMENT	TEACHERS		
			TRAINED	UNTRAINED	TOTAL
1986/87	28	18047	703	439	1142
1987/88	27	17560	734	445	1179

Sources: 1. Data Returns from Regional Directors, July 1988. Ghana Education Service Headquarters Files, Planning and Budget Division, 1989.

2. Ghana Government, 1989.

APPENDIX H

Distribution of Education Budget At Various Levels of The Education System

DISTRIBUTION OF EDUCATION BUDGET
AT VARIOUS LEVELS OF THE EDUCATION SYSTEM
(AMOUNT IN THOUSAND CEDIS)

Level of Institution	1985		1986		1988		1989	
	Allocation ₵	% Educ Budget	Allocation ₵	% Educ Budget	Allocation ₵	% Educ Budget	Allocation ₵	% Educ Budget
Primary Education	2,242,804	26.31	5,675,200	28.71	8,622,248	27.36	14,046,000	29.42
Junior Sec. School/ Middle School	1,395,319	16.37	3,467,600	17.54	6,910,555	21.93	8,502,000	17.81
Secondary School Including Sixth Form	1,032,500	12.11	2,490,381	12.60	4,393,218	13.94	4,596,000	17.81
Initial Teacher Training College	176,687	2.07	518,238	2.93	773,090	2.33	670,000	1.40
Vocational Education (Technical Institute)	138,626	1.63	376,900	1.91	442,963	1.41	442,000	0.93
Technical Education (Polytechnic)	54,630	0.64	137,842	0.70	266,851	0.85	282,000	0.59
Specialist Teacher Training Dip. Colleges	156,250	1.83	359,300	1.82	501,666	1.59	559,000	1.17
Institutions for the Handicapped	66,508	0.78	140,783	0.71	184,698	0.59	175,000	0.37
Higher Education (Third Cycle)	1,056,667	12,40	2,498,856	12.64	1,007,000	3.19	-	-

Sources: 1. Anfom et al, 1988
2. Ghana Government, 1989
3. Ghana Education Service Headquarters, Budget and Planning Division Records, 1989.

Note: The figures above do not add up to 100% as funding for other institutions under the Ministry are excluded.